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Railway Age

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EXTENDING
SERVICE
LIFE OF
BALLAST-TYPE
BRIDGES



BYERS WROUGHT IRON

To keep floor depth in overpass bridges at a minimum, and thus reduce fill in the approaches or excavation beneath the structure, bridge engineers are making extensive use of ballast-type structures with all-metal decks. The installation shown above—Colby College Railroad Overpass at Waterville, Maine—is a typical example.

A corrosion resisting floor is of course highly important because the deck is exposed to corrosive attack from refrigerator car brine drippings, drainage from coal cars, and run-off water, and is not readily accessible for regular inspection and maintenance. Wrought iron is

almost universally used for this purpose, for it not only meets all durability requirements, but in addition is easily fabricated by either riveting or welding. In the bridge illustrated, Byers Genuine Wrought Iron $\frac{1}{2}$ -inch plates were used.

Nearly every railroad has some old wrought iron bridges still in service, and so your own observation and experience will undoubtedly provide plenty of examples of the remarkable service life of wrought iron under corrosive conditions. This longer service life

is of definite dollar value, not only in bridge decks, but in protection plates, blast plates, bridge railings, conduit, pier protection plates and fire screens or curtains. A bulletin, "Wrought Iron in Bridge Construction," gives some helpful facts about the various applications—or you can write for specific information on any individual problem.

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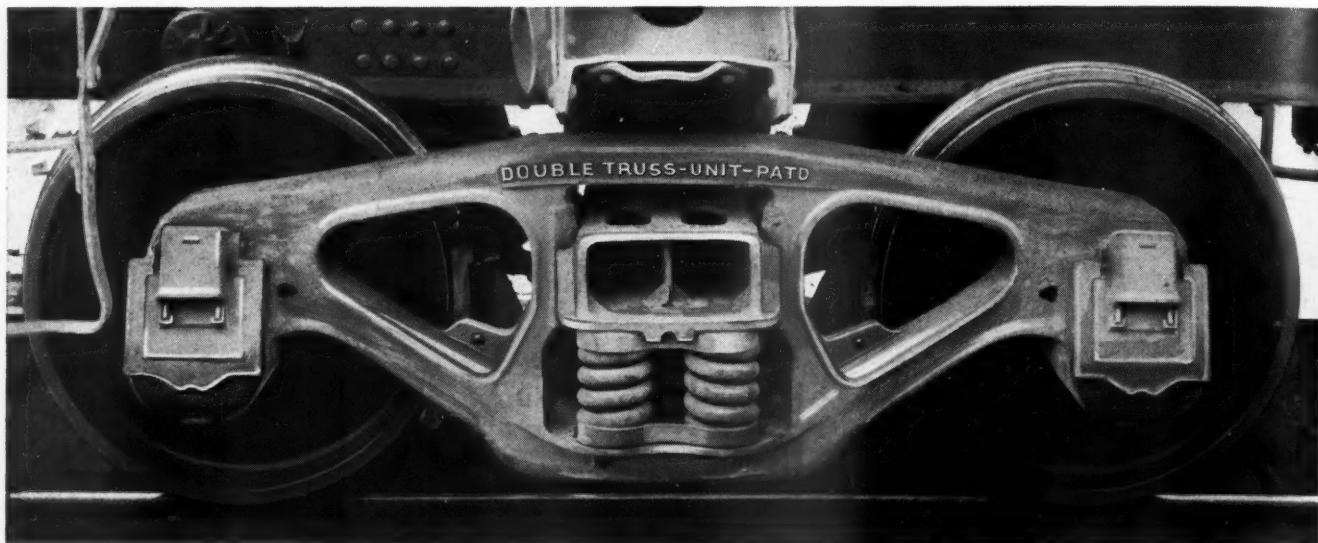
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RAILWAY AGE

Railway Employees Under the New Deal

The present administration has been widely acclaimed as a "friend of labor." Many railway employees believe it has been a friend of theirs, and probably intend at present to vote for Mr. Roosevelt for a third term. The *Railway Age* believes the New Dealers really have tried to help labor—i. e., have adopted policies intended to reduce labor's work and increase its income at the expense of employers. But it has been well said that "the road to hell is paved with good intentions"; also, that "we should pray to be saved from our fool friends."

The easily demonstrable fact is that under New Deal policies the working class of the United States has been **absolutely** worse off than during any equal period in the present generation, and **relatively** worse off than in any equal period since the Civil War. And the almost 1,700,000 persons formerly employed by the railways and their dependents have, **as a whole**, suffered relatively much more than the working class as a whole, or than almost any other equal number of the country's people.

It is unfortunate that so many who work for wages take their opinions on matters concerning their welfare from labor politicians and publications instead of looking for the real facts. Railway employees with enough "whiskers" to hold on to jobs despite the depression and other causes reducing railway earnings have benefited by New Deal assistance in boosting wage rates. But jobs have been scarcer than ever before for an equal length of time because of the discouragement of the people who provide jobs, with the result that the **total money paid** to labor, and in particular to railway labor, has been far less than in the period before the reign of the New Deal "labor benefitters."

Nobody's unsupported word has to be accepted regarding these matters. The indisputable and undis-

puted figures and facts are available to all and speak for themselves.

Six Billion Less Railway Wages in Seven Years

In an editorial published in its issue of July 13 the *Railway Age* stated the following facts: (1) In the seven New Deal years 1933-1939, inclusive, the total amount of wages and salaries paid to all workers in the United States averaged 9 billion 400 million dollars a year less than in the seven preceding years 1926-1932, inclusive. In other words, the total amount of wages and salaries paid in seven years under the New Deal was **66 billion dollars less** than in the seven years preceding the New Deal. (2) The contribution made by railway employees to this reduction was over 800 million dollars a year. In other words, in the seven years before the New Deal railway employees as a whole were paid $17\frac{3}{4}$ billions in wages, while in seven years under the New Deal they were paid only 12 billion, or 32 per cent less. That is, railway labor as a whole, received $5\frac{3}{4}$ billion dollars less in seven years of a regime extraordinarily solicitous for its welfare than in an equal period under preceding administrations popularly regarded as friends of capital rather than of labor.

The situation recalls the old story of the darky up in Boston years ago who was down on his luck and went around from door to door begging a meal. He was treated politely by all the recent fighters for freedom of the slaves, but fed by none of them. Finally he knocked at the door of a former Southerner who called him "a black rascal" and ordered him around to the back door, where he gave him a square meal. Working people, of course, are not asking for hand-outs (or, at least, were not formerly)—and nobody expects them to go around to the back door or to accept insults from

those who give them jobs. But, like those freedom-lovers in Boston, the New Dealers have professed great concern about the welfare of working people, but actually have done nothing of benefit to **labor as a whole**—including railway employees **as a whole**. They have done a great deal for the favored few, on the railways as elsewhere, which has been dramatized to give an

was also the worst of the depression, has been included in the preceding period. It had been given in that year more power and more money to spend than had ever been given to any administration in time of peace; natural recovery from the depression was well under way in all the other leading countries of the world; and there was no reason—excepting, as its opponents

Year	National Income (000,000)	Average 1922 to 1927 = 100	Income Per Capita	Average 1922 to 1927 = 100	Railway Gross Earnings (000,000)	Average 1922 to 1927 = 100	Total Compensation Railway Employees (000,000)	Average 1922 to 1927 = 100	Number of Employees	Average 1922 to 1927 = 100	Average Compensation Per Railway Employee	Average 1922 to 1927 = 100
1922.....	\$57,171		\$520		\$5,559		\$2,641		1,626,834		\$1,623	
1923.....	65,662		589		6,290		3,004		1,857,674		1,617	
1924.....	67,003		592		5,921		2,826		1,751,362		1,613	
1925.....	70,051		610		6,123		2,681		1,744,311		1,640	
1926.....	73,523		631		6,383		2,946		1,779,275		1,656	
1927.....	73,966		626		6,136		2,910		1,735,105		1,677	
TOTAL.....	407,376		3,568		36,412		17,008		10,494,561		9,826	
Average.....	67,896	100	595	100	6,069	100	2,835	100	1,749,093	100	1,638	100
1928.....	75,904		633		6,112		2,827		1,656,411		1,706	
1929.....	79,494		654		6,280		2,897		1,660,850		1,744	
1930.....	72,398		588		5,281		2,551		1,487,839		1,714	
1931.....	60,203		485		4,188		2,095		1,258,719		1,664	
1932.....	46,708		374		3,127		1,513		1,031,703		1,466	
1933.....	44,713		356		3,095		1,404		971,196		1,445	
TOTAL.....	379,420		3,090		28,083		13,287		8,066,718		9,739	
Average.....	63,237	93	515	87	4,681	77	2,215	78	1,344,453	77	1,623	98
1934.....	51,560		407		3,272		1,519		1,007,702		1,508	
1935.....	56,254		441		3,452		1,644		994,371		1,653	
1936.....	65,246		508		4,053		1,849		1,065,624		1,735	
1937.....	69,419		537		4,166		1,985		1,114,663		1,781	
1938.....	62,286		478		3,565		1,746		939,171		1,859	
1939.....	65,000		495		3,995		1,864		987,943		1,886	
TOTAL.....	369,765		2,866		22,503		10,607		6,109,474		10,422	
Average.....	61,628	91	478	80	3,751	62	1,768	62	1,018,246	58	1,737	106

effect out of proportion to its real significance, while the cold facts are that in seven years under the New Deal the average number of railway employees has been the smallest in any equal period since the seven years ending with 1900, and the total wages paid them the smallest in any equal period since the seven years ending with 1916.

Three Periods of Six Years Each

How has this come about? In a table appearing herewith we present statistics of national income in the United States for the last eighteen years (derived from the National Industrial Conference Board) divided into three six-year periods, and also certain railway statistics for the same periods. The first of these periods consists of the years 1922-1927, inclusive, we having chosen to start with 1922 because it was the year in which recovery began from the sharp business slump in 1921. It will be noted that in these six years annual national income increased from 57 billion in 1922 to 74 billion in 1927, and averaged almost 68 billion dollars.

The next six years (1928-1933, inclusive) embraced two years of great prosperity and four of depression; and in them the annual national income averaged about 63 billion dollars. The third period (1934-1939, inclusive) afforded the New Deal administration the fullest and most untrammelled opportunity to show what it could accomplish economically that ever was enjoyed by any administration in the history of the United States. Its first year of experimentation, 1933, which

claimed, the administration's own policies — why throughout 1934-1939 recovery in this country should not have been rapidly accomplished and prosperity raised to new heights.

The New Deal and the Railways

And what actually did the New Deal accomplish? Well, in spite of the growth of population, it succeeded in making the national income in the six years 1934-1939, inclusive, average about 1 billion 600 million **less** annually than in the six years ending with 1933, which included four years of the depression, and 6 billion **less** annually than during the six years ending with 1927 when the country was recovering from the slump of 1921.

What effects did this failure of recovery and other influences operating under the New Deal have on the railways, and especially on their employees? Statistics given in the accompanying table afford the answer. Railway gross earnings declined relatively much more than the national income; total compensation paid to railway employees declined in proportion to the decline in gross earnings; but average compensation per employee was increased, and consequently the number of employees declined relatively more than either national income, railway gross earnings or total compensation of employees.

Comparing the six-year period 1934-1939, inclusive —when under the New Deal we were supposed to be recovering from the present depression—with the period of six years 1922-1927, inclusive, when we actually

were recovering from the terrific slump of 1921, we find that (1) average annual national income declined 9 per cent, or 6 billion dollars; (2) average annual national income per capita declined 20 per cent from \$595 to \$478; (3) average annual railway gross earnings declined 38 per cent, or 2½ billion dollars; (4) average annual total compensation of railway employees also declined 38 per cent, or more than 1 billion dollars; (5) average annual compensation per railway employee increased 6 per cent, or \$99, and (6) average number of railway employees declined 42 per cent, or from 1,749,000 to 1,018,000.

Promises of Help—but No Real Help

One important question raised immediately by these figures is: Why did railway gross earnings decline 38 per cent when national income was declining only 9 per cent? The principal answer is that almost throughout these eighteen years more and more traffic was being diverted from the railways to other carriers that were being aided by government subsidies and discriminatory legislation. But did not Mr. Roosevelt make an important speech at Salt Lake City on September 17, 1932, indicating that if he were elected he would try to remove the government discriminations from which the railways were suffering? Did he not in the latter part of 1938 promise the Committee of Six, which he appointed, to support any legislation helpful to the railways upon which its members agreed? He did. But, in spite of these promises, Mr. Roosevelt has never made a really energetic effort to secure constructive transportation legislation; almost no such legislation has been passed under him; and the railways and their employees have been injured more during his seven years in office by government policies discriminating against them than in any preceding equal period.

To the question whether the assistance of the New Deal administration in securing and maintaining advances in wages for railway employees has benefited

* * *

Willkie or Chronic Depression?

In response to a considerable number of requests, the leading editorial in our July 27 issue, entitled "Two Political Candidates and the Future of Business," will be reprinted. The article analyzes the heartening prospects for general business and railroad traffic which will ensue in the event of the election of Mr. Willkie, in contrast to the chronic depression which will probably persist if President Roosevelt is re-installed in violation of the precedent against a third term. These reprints may be obtained from our New York office, 30 Church Street, at a cost of \$2.50 per 100 copies.

railway men as a whole, the figures given in the table answer a conclusive negative. For in spite of the advances in average wages, the total amount of compensation paid to employees by the railways has been determined, as it always has been, by their gross earnings, and has declined almost exactly in proportion with gross earnings. In the six years ending with 1933 gross earnings were 23 per cent and total compensation of employees 22 per cent less than in the preceding six years. In the six years ending with 1939 both gross earnings and total compensation of employees were 38 per cent less than in the six years ending with 1927. The advances in wages made under the New Deal did not increase the total compensation of employees; they simply reduced the number of employees, and increased the pay of those left.

What Credit Should Railway Employees Give New Deal?

Should railway employees give the New Deal credit even for the fact that the average annual railway wage has been higher during the last six years than in any preceding six consecutive years? Well, it was also higher during the six years 1922-1927 than in any equal previous period; and in fact we doubt if there can be shown to have ever been six consecutive years in the entire history of our railroads in which the average pay of their employees was not higher than in any preceding six consecutive years, excepting the period including the years 1932 and 1933 when the temporary 10 per cent reduction was in effect. Railway labor should consider much more seriously some other facts of much greater significance. The average number of railway employees under the New Deal during the last six years has been about 300,000 less than during the preceding six years, and about 750,000 less than during the six years ending with 1927—in fact, as already stated, the smallest in any equal period since the six years ending with 1900. Furthermore, the total compensation of railway employees during the last six years has been almost 3 billion dollars less than during the preceding six years; almost 6½ billion dollars less than in the six years ending with 1927; and the smallest as already stated in any equal period since the six years ending with 1916.

Why should railway employees give the New Deal administration credit for the advances in wages it has helped them secure, in view of the fact that advances in wages have been made in virtually every equal period in the history of our railroads—and not give it discredit for the fact that under it large reductions in the number of railway employees and in the total amount of compensation paid them have lasted longer than ever before in history?

Railway men as a class have little to thank the New Deal for and much to blame it for. It has prevented the revival of the economic progress under which the railways formerly were able not only to advance wages, but usually to pay them to an increasing, instead of a

greatly reduced, number of employees. And although possessed of more power than any preceding administration in time of peace, it has completely failed to make any really energetic effort to secure changes in the government policies which are responsible for the

fact that not only have railway gross earnings, total compensation of railway employees and railway employment declined much more during the depression than ever before, but **relatively four times as much as the national income.**

Given Good Gross, Net Will Follow

Could the railroads improve their net railway operating revenue by reducing the rates on truck-competitive traffic? Let us look at the record:

Industrial Production and Railroad Traffic and Revenues Expressed in Percentages of 1926

	Federal Reserve Board Index of Industrial Production Restated with 1926 = 100%	R. R. Operating Revenues	R. R. Freight Revenues	R. R. Operating Expenses	Tons Originated	Rev. Ton-Miles	Avg. Miles per Haul	Employee Compensation	Taxes, Car Hire Equipment Rental and Fixed Charges	Net Ry. Oper. Income
1926	100	100	100	100	100	100	100	100	100	100
1927	99	96	96	98	100	97	101	99	100	88
1928	102	96	97	96	96	98	102	96	101	97
1929	110	98	100	99	100	101	102	98	103	103
1930	88	83	85	84	86	86	101	87	96	72
1931	75	66	68	69	67	70	106	71	94	43
1932	59	49	51	51	48	53	111	51	90	27
1933	70	48	52	48	52	56	109	47	89	39
1934	73	51	55	52	57	61	108	52	88	38
1935	83	54	58	55	59	64	109	56	87	41
1936	97	63	69	63	72	76	108	63	95	55
1937	102	65	70	67	76	81	108	67	93	49
1938	79	56	59	58	58	65	114	59	93	31
1939	97	63	68	62	67	75	119	63	95	59

The reports to the Interstate Commerce Commission show that originated tonnage and revenue per ton-mile have been on the toboggan since 1929, and that rate increases have not served to halt the downward trend of revenue per ton-mile. For instance, the revenue per ton-mile in 1938, with only 9 months of the Ex Parte 123 increases, was greater than it was in 1939, with a full 12 months of these increases.

Revenue ton-mile earnings were lower in 1939 than at any time since 1926-29, except 1937. They are now as low as in 1936 when the much smaller Ex Parte 115 increases were in effect, and they are materially lower than they were when the even lower Ex Parte 103 increases were in effect.

The downward trend of tons originated is even more pronounced. On the other hand the falling off in revenue ton-miles has not been nearly so pronounced, and the average haul has increased 19 per cent, **notwithstanding that there has been a decided trend all during this period towards decentralization in industry, which should have reduced the average haul and thus have caused ton-mileage to show more of a decrease than tons originated.**

The decline of average railroad revenues per ton-mile despite blanket rate increases—combined with the increase in the average railroad haul,

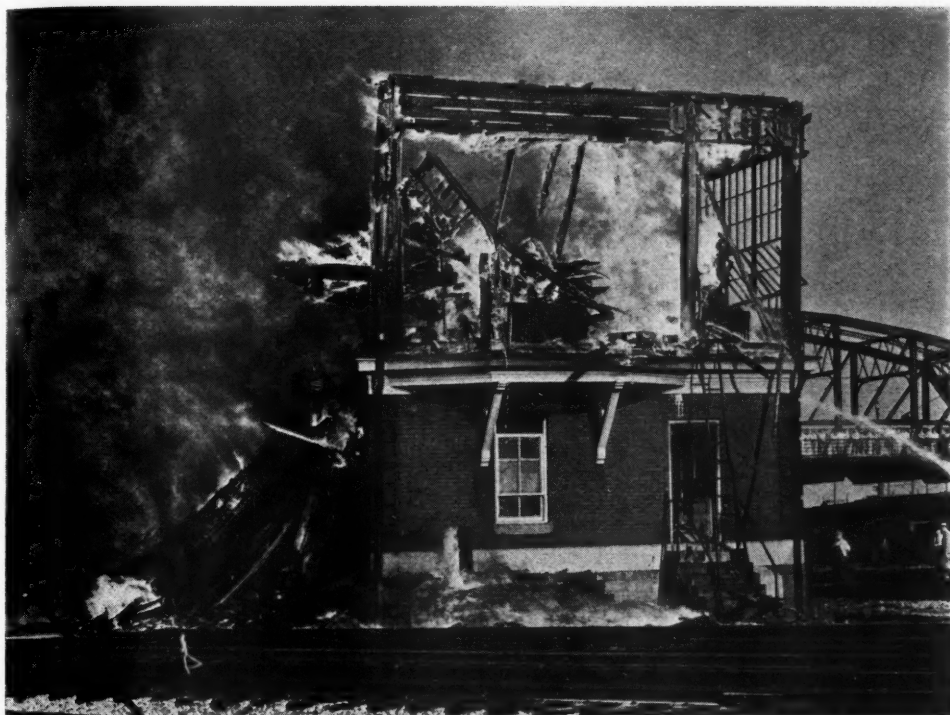
running contrary to the tendency of short-hauling to increase—indicate clearly an enormous diversion of short-haul and high-rated tonnage to the trucks. The extreme profitability of tonnage lost to trucks is strikingly indicated by the figures compiled by L. W. Horning, the A. A. R.'s competitive traffic expert, who showed (*Railway Age*, April 27, 1940, page 747) the trucks taking in one-third of total freight revenues while performing less than 9 per cent of total ton-miles. That is to say, the trucks are handling traffic which, on the average, pays more than three times as much per ton-mile as the traffic moving by rail.

It is commendable that railroad management has been able, through increased efficiency and retrenchment, to reduce direct operating expenses proportionately to the reduction in total revenues notwithstanding the increases in wages and other such costs, and the strong tendency for unit costs to increase as volume decreases. It is the fixed costs, which do not vary with volume, amounting to more than one-fourth of total expense, which have played havoc with net income.

To pay their taxes and meet their fixed charges, the railroads need **volume** traffic and revenues. No amount of operating economies can overcome the need for larger gross. The reason the railroads do not attain this larger gross is because of the fear in some quarters that, to win back the traffic necessary to a substantially larger gross, they might have to make rate concessions which would make the larger traffic unprofitable—i. e., that their operating expenses might climb faster than their revenues.

But is not this fear based on rather tenuous grounds—in view of the fact that the tonnage to be won back is now paying more than three times the average railroad ton-mile rate; coupled with the proven ability of the railroads to maintain a favorable operating ratio under even the most adverse circumstances? The railroads have never yet, except under federal control, shown any weakness when it comes to turning gross into net—but it would take something approaching a miracle to convert present gross revenues into enough net to cover fixed charges and leave anything substantial over for the stockholders.

There appears to be only one place, at the present level of industrial activity, where the railroads can get the gross they need to put their operations on a profitable basis and that is from that proportion of the upwards of 1½ billion dollars of traffic now moving by truck which can be handled more economically by rail. This traffic is paying the trucks from 2 to 3 cents and even more, on the average, per ton-mile—and there isn't much traffic that the railroads cannot handle profitably at rates shaved considerably under such levels as those.



End View of Tower Only a Few Minutes After Fire Started. Note Smoke From Burning Insulation

Fire in Tower Demoralizes Terminal Operations Temporarily

Destruction of key interlocking plant at St. Louis Union station interrupts train arrivals and departures, until emergency organization could be developed

CONFRONTED with an emergency of great magnitude as a result of the destruction by fire of the key interlocking tower from which all train movements into and out of the Union station at St. Louis, Mo., are controlled, just at the beginning of one of the busiest periods of the day, through quick and effective organization of the forces available, the officers of the Terminal Railroad Association were able to create order out of the initial confusion and thus meet the requirements of the new and unexpected situation, which for a time completely demoralized the operation of this, the largest passenger terminal in this country. As the temporary organization that must function until a new interlocking can be installed was perfected, conditions improved progressively so that after 24 hours trains were being handled with only moderate delays and after 48 hours delays that were due to emergency routing had been practically eliminated.

Disaster Stops All Trains

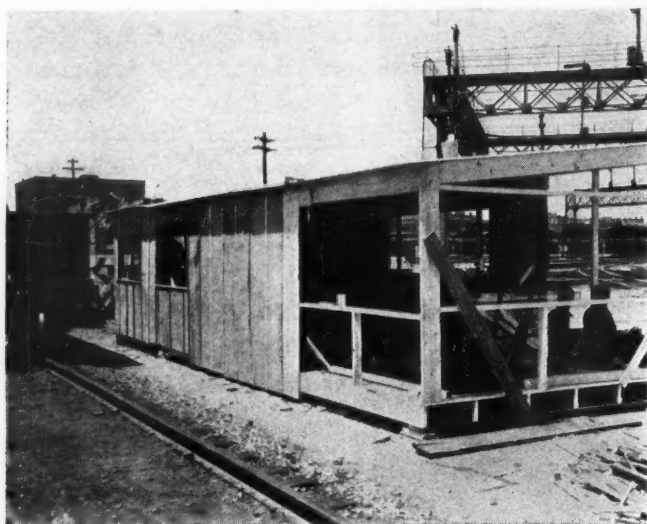
This emergency arose when the interlocking tower from which every train and switching movement into and out of the Union station is controlled, was destroyed by fire late in the afternoon of July 22, making it impossible to manipulate either switches or signals, thus immobilizing eight trains that were in the trainshed

preparatory to departure and also preventing the entry of incoming trains, or of equipment for outgoing trains, into the trainshed.

The large number of trains that were due to arrive during the first few hours after the fire were stopped and unloaded at outlying stations on the respective roads or on the Terminal's lines.

The Union station at St. Louis, the largest passenger terminal in the country, is of the stub-end type, with 42 station tracks which lie in a north and south direction, while the six main tracks that provide the approach to the station run east and west, approximately at right angles to the axis of the train shed. The station tracks connect into the main tracks through a series of wye tracks, as shown on the accompanying plan. As originally constructed in 1903, the trainshed covered 32 station tracks, but in 1930 the need for additional trackage, and particularly for tracks that could accommodate longer trains, became so acute that 10 additional tracks were built, making a total of 42 platform tracks. The wyes that serve the original 32 tracks are so arranged that trains from any one of the trainshed tracks can head out either the east or west. On the other hand, only westbound trains can head out of the 10 additional tracks; eastbound trains must back out before they can head to the east.

Seventeen roads operate passenger trains into and out



Temporary Headquarters for Train Dispatchers Were Erected Quickly

of this terminal, 93 inbound and 94 outbound trains being scheduled every 24 hours. All outgoing trains are backed into the trainshed and, to avoid pollution of the air in the trainshed with locomotive gases, all incoming trains are also backed in. This means that every incoming train from either the east or west must run beyond the limits of the interlocking and then back around the wye to its assigned track, requiring two movements through the interlocking. In addition, numerous empty equipment and other switching movements are involved, since road locomotives move into and out of the trainshed independent of the trains they handle, prior to departure and subsequent to arrival; and many express and mail cars are cut off and handled separately to the adjacent mail and express terminals.

Daily Line-ups Number 1,700

As an indication of the magnitude of the interlocking, the layout controlled from the tower contains 97 single switches, 60 double-slip switches, 5 movable-point frogs, 42 station tracks and 6 main-line tracks. The interlocking had 262 working levers which controlled the foregoing track functions and 296 signals. Also indicating the complexity of both the design and operation of this plant, it provides for approximately 2,500 separate routings. To give an idea of the intensive operation of the plant and the tracks it controls, an average of 1,700 line-ups are made on the interlocking machine every 24 hours.

The tower, which was 25 ft. by 73 ft. in plan, consisted of two stories and a basement; the foundation was of concrete; the first story was of brick; while, because of the necessity for having maximum glass area so as not to restrict the view of the levermen, the second story was constructed with a wood frame and consisted principally of window sash separated by narrow mullions. Because of the numerous switches and signals controlled from the tower, a multitude of wires entered the building from various points and were led through horizontal and vertical conduits. During both the first and second tricks, 8 levermen and 2 train directors were on duty constantly, while 4 levermen were able to handle the third trick.

The fire was discovered at 4:45 p. m. on July 22, apparently having started near the northeast corner of the basement. At present neither the cause nor the exact point of origin has been determined. If it did not start in the insulated wiring it was soon communicated to it and

quickly reached a vertical conduit. From this point it spread so quickly that only two of the ten men on the second floor were able to escape by way of the stairway. Several fire extinguishers were located on this floor, but the men were given no opportunity to use them.

Tower Destroyed Quickly

A fire hydrant was located about 50 ft. from the tower, but to prevent tampering had been fitted with left-hand threads and in the excitement of the moment the operating stem was twisted off in an attempt to open it by turning it to the right, and the hydrant became useless. While ladders were being set up for the escape of the men, one of the towermen notified the station master, who called the fire department. Owing to the fact that the nearest city fire hydrant was at Clark and Eighteenth streets, approximately 1,000 ft. from the tower, the building and equipment were practically destroyed by the time the fire department was in position to turn water onto the fire. Incidentally, the several lines of hose that were laid to reach the building crossed both of the eastbound wyes and thus effectually blocked the departure of the east-bound trains that were in the trainshed, until the hose was removed about 7 p. m.

Recognizing the impracticability of getting trains into the trainshed until an emergency organization could be set up, even before the fire apparatus arrived, word was sent out to Washington Avenue, Tower Grove and Delmar Boulevard stations to unload passengers from incoming trains. Fleets of taxicabs were pressed into service to transport passengers from these stations. Several trains that had already reached the yards were unloaded at Twelfth street on the Terminal tracks. Persons waiting at the Union station for friends were notified where the trains were to be unloaded.

Before the fire was extinguished, calls were sent out to assemble extra switchmen, signal maintainers and other employees. The interlocking signals were taken out of service at once. Each switch and movable-point frog in this interlocking is operated by compressed air which is controlled by electro-pneumatic valves at the switches. Since the air lines were independent of the tower and the compressors are located in the power house at Eighteenth street, the compressed air supply was still



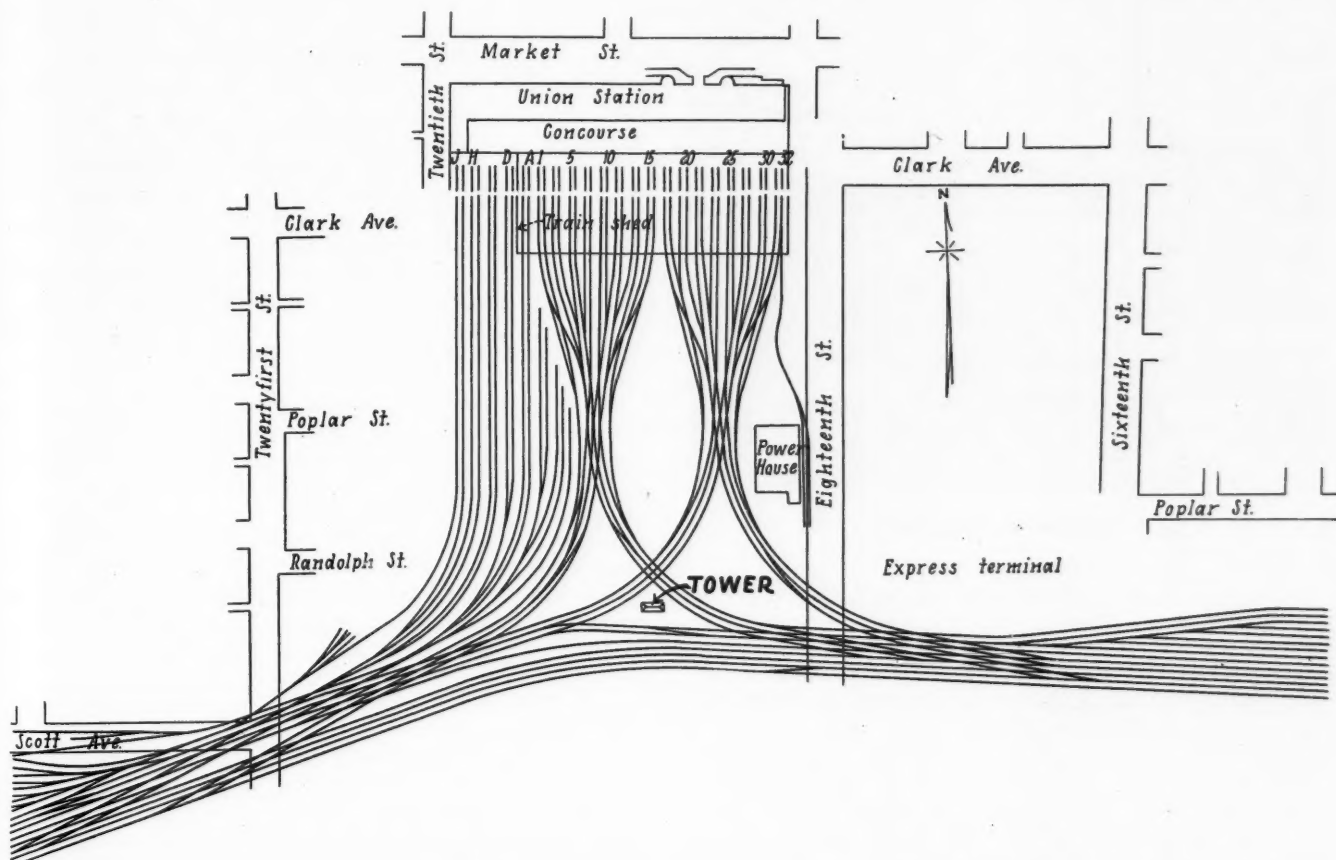
A Signalman "Fingering" a Switch Machine

intact after the fire, so that local and manual manipulation of the switch machines became possible.

Emergency Organization Set Up

As the men reported for duty, the train directors and dispatchers set up temporary headquarters at a point near the tower, and switchmen and other employees were so stationed that each switch was manned. When a route was to be set up, the director issued orders to the men at every switch, indicating how it was to be lined. Switch-

all night installing telephones leading from the station master's office to the dispatcher's temporary open-air headquarters. Later, telephones were also placed near groups of switches, so that the dispatcher could communicate with each strategic point without shouting. As the west end of the plant, in the vicinity of Scott avenue and Twenty-first street, is far from the train director's office and the switches are somewhat scattered, a public address system was set up here so that directions could be transmitted to all points readily and effectively. Trenches were dug where necessary to cross tracks with



Track Layout Approaching the Union Station and Arrangement of Wyes and Tracks in Trainshed

men were assigned to ride or walk ahead of each incoming and outgoing train to examine the switches and thus insure that they were lined correctly for the routing. All directions were shouted to the men at the various switches, instructing them how to line up the routes.

By nightfall, a supply of electric lanterns had been secured to aid in giving hand signals, and megaphones were obtained for amplifying the shouted instructions. In this way the trainshed was cleared of outgoing trains shortly after 8 p. m. and by 9 p. m. trains scheduled for later departure had been placed on the station tracks and were receiving passengers. After midnight all trains scheduled for departure on Tuesday morning were set on the trainshed tracks so that switching would not delay incoming morning trains. All during Monday night, to insure against the throwing of switches in error, as soon as a switch was thrown for any route it was blocked in its new position by means of a wooden wedge. This practice has been discontinued, however, as the men have become acquainted with their duties.

Simultaneously with these activities, floodlights were installed at various points to enable the men to see more clearly what they were doing. Telephone men worked

telephone or other wires, but elsewhere they were merely strung on the ground. By Tuesday morning carpenters were on the ground to construct a temporary building to house the microphones, telephones and office equipment that are being used by the dispatchers.

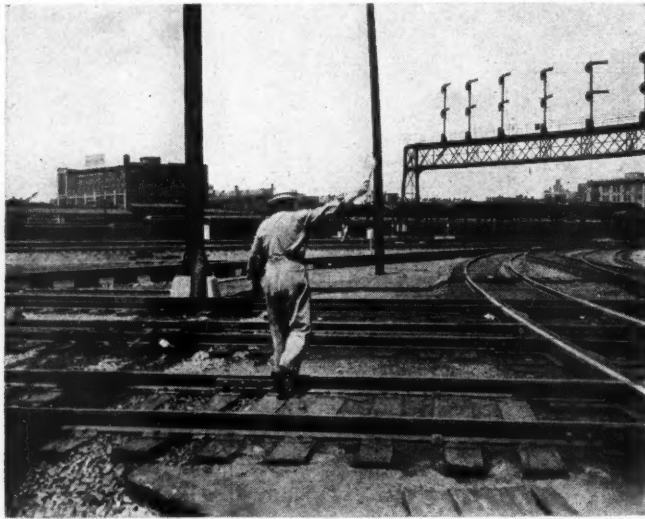
Since the fire destroyed all possibility of continuing the electrical control and operation of the switch machines, it became necessary to manipulate the control valves manually. There are three valves on each of these machines, one of which controls the locking while the other two throw the switch points. When it becomes necessary to change the position of the switch, or of the movable-point frogs, the operator presses the middle valve with his finger to open it, and this in turn unlocks the switch. He then "fingers" the valve on the right or left, depending on which way the switch is to be thrown, thus operating the machine.

How the Forces Are Organized

In the emergency, on Monday night about 200 men were employed to line up switches, pilot trains, transmit orders, etc. As the men learned what was expected of

them, it became possible to bring order out of the initial confusion and organize the forces on a semi-permanent basis. At present there are 15 signalmen on each 12-hr. trick, and 3 switchmen on each 8-hr. trick, or a total of 39 men handling switches and directing trains on the ground. In addition, the 20 towermen and 4 train directors have been given various assignments in the handling of trains and the transmission of orders.

To simplify the emergency operation still further, small hand-operated knife switches with battery power supply have been ordered and are to be installed at the track



Trains Move on Hand Signals

switches to manipulate the electro-pneumatic valves, and this will reduce still further the number of men required for the operation of the switches. In addition, electric switch lamps are being installed at the switches and movable-point frogs to assist both switchmen and engineers in determining the position of the points, since the signals will remain inoperative and trains must be moved by hand signals until the interlocking can be restored to service, which may require several months.

At the height of the fire, P. M. Gault, signal engineer, Missouri Pacific, and chairman of the Terminal Railroad Association's signal committee, at the request of Phillip

J. Watson, Jr., president of the Terminal, sent telegrams to the other members of the committee calling a meeting for Tuesday morning to discuss plans for a modern interlocking system to replace the destroyed plant. This committee, which is composed of the signal engineers of several of the Terminal's proprietary lines, is now engaged, jointly with A. P. Hix, signal engineer, Terminal Railroad Association, in the preparation of plans for the new plant.

Fortunately, one of these lines had on hand a new 300-lever interlocking machine that is suited for the needs of the Union station. While certain alterations will be required, the fact that it will not be necessary to build a new machine will shorten the period of hand operation by several weeks. Plans have not yet been advanced sufficiently to make it possible to estimate the time that will be required to install the new interlocking.

While it is possible to estimate the value of the physical property actually destroyed by the fire, this represents only a small part of the loss to the terminal and to the lines using the Union station. For example, one road, the Missouri Pacific, has annulled six suburban trains for an indeterminate period to avoid delays to these trains and to simplify the operation of the terminal during the emergency. As a part of the loss involved in the fire, the Terminal must continue its emergency organization until the new interlocking facilities can be provided.

While the operation of the terminal was demoralized for hours after the fire, the Terminal organization reacted quickly and vigorously under the spur of the disaster. In the face of the rapidly spreading fire that threatened to cut him off, one of the towermen reported it to the station master, who notified the city fire department. Before the firemen arrived, instructions were being sent to stop all incoming trains, and then the round-up of available employees who could be used began. By the time the hose lines were taken up, shortly after 7 p. m., the emergency organization was functioning to the extent that movements into and out of the trainshed were possible, although of necessity they were made slowly to insure that they would be made safely. As the men learned their duties, efforts were directed to perfecting the organization and to eliminating delays to trains, and at the end of 48 hours most trains were moving in and out on time or with only minor delays created by the need for cautious operation.

* * * * *



C. P. R. Brakeman In Pictures

S. H. Shaw, a brakeman on Canadian Pacific trains out of Medicine Hat, Alta., and Calgary since 1917, has recently been engaged with a film company in shooting railroad sequences in a new production called "Forty-Ninth Parallel" now in the making at Banff, Alta. and Montreal, Que. The picture shows Mr. Shaw in a scene on the open observation car of C. P. R. Train No. 7 between Calgary and Banff with British film star Eric Portman. Raymond Massey, Elizabeth Bergner and Leslie Howard also appear in the film.

Dry Ice Used to Increasing Extent for Perishable Shipments

Service tests indicate that wet and dry ice combination gives good results without installing specialized equipment in refrigerator cars

By C. T. Longaker

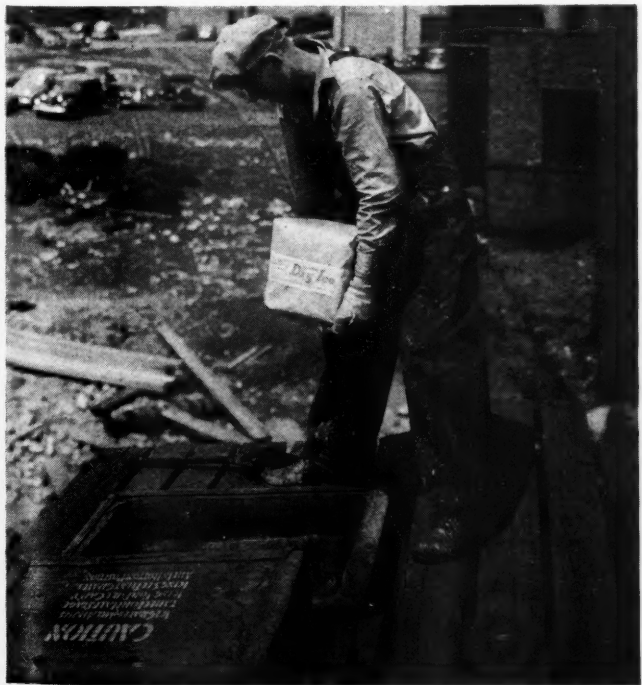
Technical Sales Division, The Liquid Carbonic Corporation, Chicago

THE carbon dioxide industry has been working for a number of years to popularize the use of dry ice, for refrigerating perishable commodities shipped by rail, but made little real progress until comparatively recently when it was shown that no specialized equipment need be installed at additional cost in the refrigerator cars. With this limitation removed and a considerable background of satisfactory service performance, dry ice is now being used to an increased extent for railroad perishable shipments.

The recently simplified method of applying dry ice to refrigerator-car shipments is to use a combination of wet and dry ice in the regular bunkers of standard refrigerator cars, without the employment of any special equipment. The refrigerating effectiveness and the economic value of this method has been demonstrated in a series of operating tests conducted by research engineers of the Liquid Carbonic Corporation in collaboration with several railway refrigerator-car lines.

What the Tests Have Shown

These tests have shown, among other things, that the use of dry ice in combination with water ice in



Workman Loading a Wrapped Block of Dry Ice Into the Bunker of a Refrigerator Car

standard refrigerator cars with 2½ in. of insulation thickness, furnishes the same service as water ice in super-insulated cars that have 5½ in. of insulation. It is not necessary for the carriers to rush into competitive building programs to furnish shippers super-

Comparative Ice Consumption and Cost of Test Shipments in Refrigerator Cars from Indianapolis, Ind., to San Francisco, Cal.

Lading: Fresh Meat			
Super-Insulated Car		Standard Car	
12 readings, average 38 deg. F.		8 readings, average 43 deg. F.	
Outside temperature, 82 deg. F.		Outside temperature, 84 deg. F.	
Unloading Data			
12 readings, average 48 deg. F.		8 readings, average 45 deg. F.	
Outside temperature, 60 deg. F.		Outside temperature, 60 deg. F.	
Ice Consumption in Pre-cooling, Lb.			
	Wet Ice	Dry Ice	Wet Ice
First day	11,600	0	0
Second day	400	0	6,600
Third day	2,800	0	1,000
	900	429	1,800
	15,700	429	9,400
Cost	\$31.40	Cost	\$27.39

insulated cars since water ice and dry ice will get the same results.

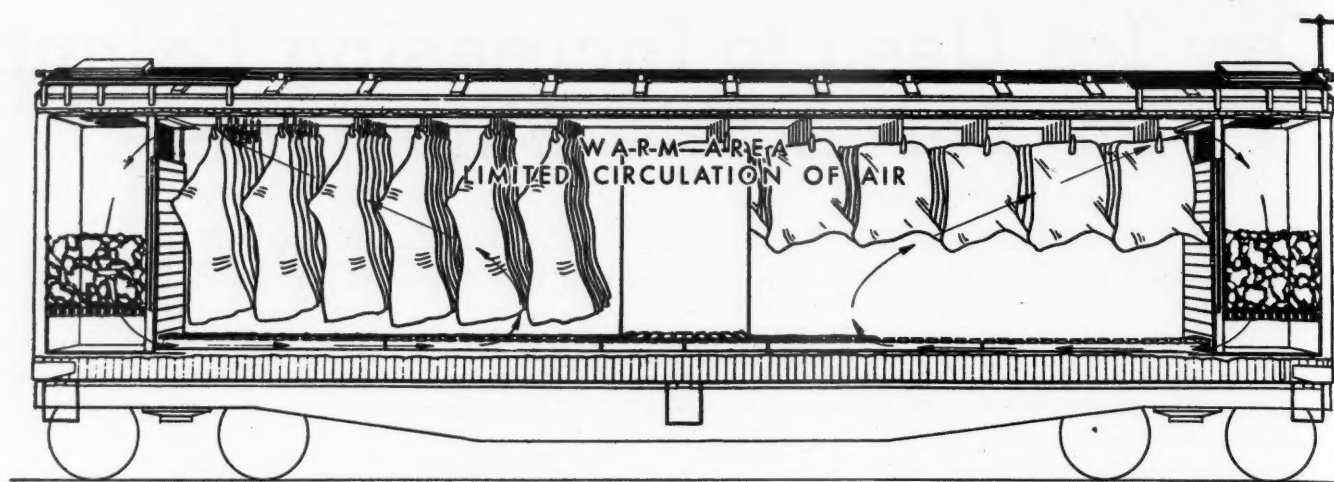
One of the tests made to determine comparative results of the use of water ice in a super-insulated car (5½ in. of insulation) versus the use of a water-ice-dry-ice combination in a standard car (2½ in. of insulation) was completed on a shipment from Indianapolis, Ind., to San Francisco, Cal. The type of lading and outside temperatures were practically the same in both cases. Comparative ice consumptions and costs are given in the table which shows a reduction in total expense from \$31.40 to \$27.39 in favor of the wet- and dry-ice combination.

The low temperature of dry ice prolongs the refrigeration value of the water ice used, eliminates the need of re-icing during transit and does away with the use of salt. The elimination of salt in itself is a matter that has been getting considerable attention, since the corrosiveness of brine can prove a costly factor in the maintenance of rail equipment.

The economies obtained, it is explained, may be used to advantage by the railroads in passing the benefits on to shippers, and recapturing much of the business lost in the last several years to competing transportation agencies.

In the recommended application of dry ice to standard refrigerator cars the regular bunkers are filled to three-quarters of their depth with water ice. To this are added blocks of dry ice and then sufficient water ice is put on top of the dry ice to fill the bunkers.

Dry ice, with a temperature of -109 deg. F., lowers



Phantom Drawing Which Shows the Reduced Circulation of Cold Air with Water Ice in the Bunkers About One-Half Melted

the temperature of the surrounding water ice to a point ranging from -36 to -40 deg. F. This large mass of extremely low-temperature refrigerant creates and maintains positive active circulation within the body of the car. The water ice does not melt appreciably until the dry ice is completely evaporated. Then the mass of ice slowly warms up (usually from a point between -36 and -40 deg. F., to $+32$ deg. F.) when it starts to melt. During all this time, positive currents have assured circulation of cold air to protect the lading.

The method of maintaining desired full circulation of cool air in refrigerator cars using the wet- and dry-ice combination is shown in one of the drawings and this full circulation is also secured when operating with water ice exclusively and with full bunkers. When the water ice has melted down in the bunkers, however, as shown in the other drawing, the top center portion of the load no longer receives proper circulation; hence, no proper refrigeration. The cold air tends to stratify and a warm spot develops in the center of the car. As shown, there is sufficient refrigeration remaining in the ice and salt in the lower part of the bunkers to refrigerate the lading, but, there isn't enough cold surface remaining to create adequate circulation currents with sufficient velocity to maintain full refrigeration protection for the lading. The addition of dry ice to the water ice prevents this condition from developing and eliminates the necessity of re-icing during transit.

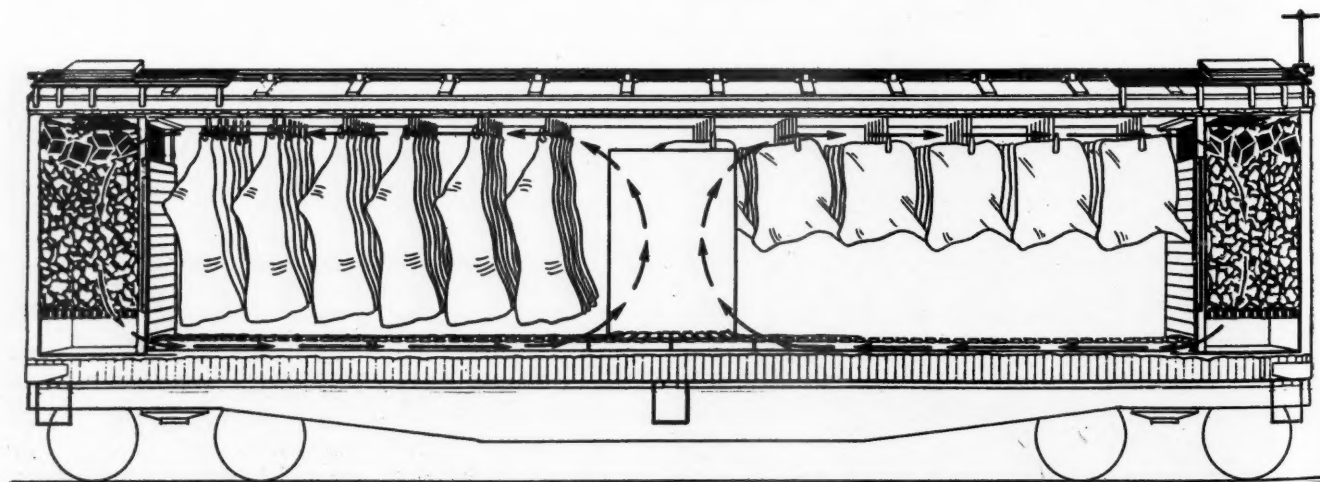
The fact that dry ice is carbon dioxide (solidified) is a virtue in itself, since carbon dioxide acts as an inhibitor of bacteria. In the refrigerator car, each pound of dry ice evaporates to form eight cu. ft. of carbonic acid gas which exerts a highly beneficial effect on meats, vegetables, fruits and other perishable commodities being handled.

To eliminate the possibility of mold, softness and decay developing in shipments of green produce, it has been found advisable to add dry ice to water ice in refrigerator-car bunkers and to top this off with chunk ice. The green produce, it has been noted, benefits materially from the use of dry ice and appears fresher and brighter than shipments not receiving the dry-ice treatment. The same procedure applies to fresh fruits.

In the transportation of fresh meat it has been found that the use of 100 lb. of dry ice for each day the car is in transit puts the load into destination at a temperature of from 35 to 40 deg. F., and with bunkers about three-quarters full of water ice on arrival. Shippers are using this refrigeration method up to five-day deliveries without transit re-icing.

The use of dry ice alone is believed to be an effective and economical means of shipping frozen poultry and dairy products by rail. This method is already being employed as regular procedure by truck lines handling loads of these products originating in mid-western cities and consigned to seaboard points.

Refrigerator-car leasing lines have been approached



The Use of Dry Ice in the Upper Part of Refrigerator Car Ice Bunkers Assures Full Circulation of Cold Air for a Longer Time

recently with the idea that much of this latter business might be recaptured by the railroads through the use of straight dry ice as a refrigerant for such type loads. It has been pointed out that this method would provide savings over the present water-ice-and-salt refrigeration costs sufficient to enable the roads to offer greater competition in this particular field.

If railroads were to use dry ice exclusively in carrying the frozen type loads, placing the dry ice directly on top of the lading, they could regain much of the business now being done by competitive agencies, it is believed. Between 500 and 600 lb. of dry ice would be the requirement for the average load of frozen poultry, eggs and dairy products, the amount now being employed by the truck lines. The railroads should have an added advantage in that their cars are better constructed and more suitably insulated than most of the trucks now in the service.

As part of a program to aid the railroads in this market, the Liquid Carbonic Corporation has developed new equipment for the pre-cooling of standard refrigerator cars for frozen type loads. The pre-cooler makes use of zero degree brine from the cold-storage plant to prepare the cars for their trips, providing refrigeration equivalent to melting of $4\frac{1}{2}$ tons of water ice per hour.

Case histories being prepared on the application of dry ice to frozen-food shipments by rail and tests made of dry ice and water ice in combination for other types of perishable loads indicate that, on performance and the economies involved in its use, dry ice warrants continued attention on the part of railroads.

I. C. Celebrates Year Without Accident

THE completion of a year, or 2,326,098 man-hours, without a reportable injury to the 968 men employed at the locomotive shops of the Illinois Central at Paducah, Ky., was celebrated on July 28 with an all-day picnic which J. L. Beven, president, had promised the employees as a reward if they reached their goal. More than 4,500 employees and members of their families, officers of the railroad and J. F. McCreary, vice-president of the Brotherhood of Railway Carmen of America attended.

Paducah shop is one of the largest in the country, covering 110 acres with 21 acres under one roof. During the year it was engaged in the heavy repair, erection and conversion of locomotives on a full-time basis, with a skeleton force working on Sundays. A total of 13 Class-2500 locomotives were built new and 95 of various classes were modernized. In addition, more than 5,000 different articles, with a completed value of \$2,000,000, were manufactured. At the present time, 1,157 employees are working in the shop.

While the employees were establishing this performance between July 10, 1939, and July 10, 1940, they were setting up another record. During the 84 days or 636,128 man hours from April 8, 1940, to July 2, 1940, they functioned without even a minor injury.

The goal of a year without a reportable injury was attained by the employment of standard safety methods and the injection of new ideas, together with the co-operation of all employees. Some of the ideas employed are as follows:

1. A safety campaign chairman and an assistant in each department were selected from the employees and elected by the group safety leaders.

2. A group safety leader plan was adopted whereby

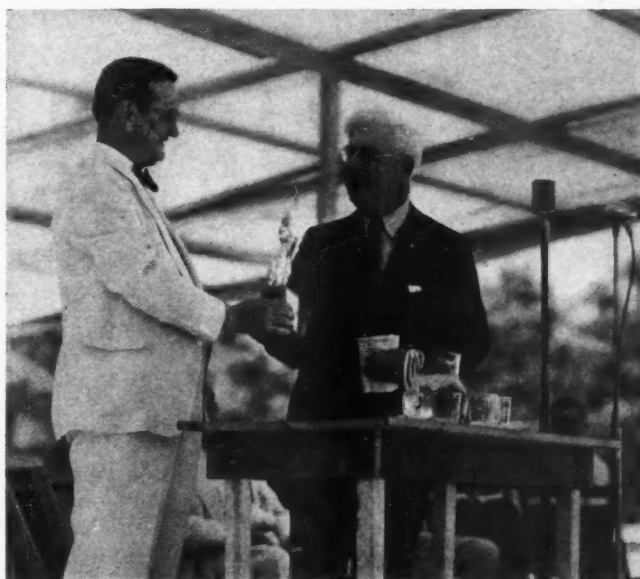
an average of about 18 employees per group, who work in a specified area, elected their own leader. This leader was responsible for passing on information pertaining to safety and calling attention to hazards that exist and to hazardous practices of employees in his group.

3. A safety suggestion system was established and all employees were encouraged to make suggestions to correct accident hazards. These suggestions were turned over to the group safety leader, who in turn gave them to the foreman in charge of the area where the hazard existed. The foreman took steps to correct such hazards.

4. Spirited discussion of all forms of safety took place at the weekly meetings held jointly by supervisors and employees' safety committees.

5. Safety shoes were worn by all employees.

6. Numerous attractive safety signs were moved from one department to another in order that they would not become stale, or lose their appeal. Information on safety boards showed the number of days that each



President Beven Was Appointed Safety Group Leader Number One by Paducah Shop Employees and Presented With an Emblem of Office by C. R. Young, Manager of Personnel

department worked without a personal injury and other miscellaneous personal injury data.

7. The distribution of "catchy" literature was placed in the hands of every supervisor and employee through the safety chairman and group safety leader system.

In paying tribute to the employees, Mr. Beven said, "This record did not just happen. The men gathered here worked for that record and they are entitled to be commended for having worked well." Mr. Beven expressed gratification at the fact that the officers of the shop crafts co-operated in sponsoring the safety campaign. He characterized it as the sort of co-operation that lends dignity to labor leadership.

Mr. McCreary expressed his appreciation to the local management for educating the employees in the benefits coming from safety activity and highly praised the local workmen for their contribution, which was exemplified by the fine spirit of co-operation and their interest taken in a campaign which had for its purpose the preservation of human life. He stressed the fact that rules of safety had not been forced upon the employees without their consent, but that they had been explained to the employees and their representatives, with the result that the employees wanted to comply with the rules, and the craft committees assisted in carrying them out.



A Section of the Mojave River Bed as it Winds Through Afton Canyon. Showing Bridge No. 196.12 Under Reconstruction

Bridges Given Deep Roots With Steel H-Section Piles

Four structures on the Union Pacific in southern California will face future floods successfully with deeper foundations and wider openings

BY more than doubling the length of bridge waterways, extending spans to minimize obstruction to flow, and anchoring piers and abutments on H-section steel piles driven to depths of 70 ft. or more below the base of rail, the Union Pacific has recently taken the threat out of the periodically threatening Mojave river at four of its important crossings of this river in southern California. Through these measures, adequate channels have been provided for flood waters, obstructions to debris and sources of eddying currents have been minimized, and the structures themselves have been fortified against erosion and scour which experience has shown can be expected with floods of at least the proportions of that which occurred early in March, 1938, when the substructures of all four of the bridges in question were damaged.

The four bridges, located within a distance of 37 miles on the single-track Los Angeles division of the road between Las Vegas, Cal. and Daggett, carry the railroad over the winding channel of the river as it enters and passes through what is known as Afton canyon, a relatively wide gorge about 10 miles long, in otherwise relatively flat desert country, formed by high, irregular mountain ranges. The river, whose source is in the San Bernardino mountains only approximately 75 miles southwest of the canyon, is normally dry throughout the length of the canyon most of the year, but, fed by a steep rocky water shed which reaches elevations of 5,000 to 6,000 ft., including innumerable steep canyons and gullies, rises rapidly with every severe storm, and, aided by a relatively steep gradient throughout most of its course, assumes ravaging proportions with prolonged heavy general rains back in the mountains. Through Afton canyon the flow becomes particularly rapid in times of flood, shifting in volume and intensity from

side to side as it takes the bends or is otherwise influenced by the topography of the bottom.

Equally serious as the volume and rapidity of flow at these times is the character of the river bed itself, consisting largely of light sand and gravel which, when thoroughly saturated and agitated by flood waters, loses practically all of its supporting power to considerable depths and moves almost as freely as the water itself. Evidences of this have been noted during flood periods when sounding rods have been lowered into the bed as much as 10 to 15 ft. below the normal dry bed level, and the fact was established definitely following the flood of 1938 when surface materials were encountered as much as 20 ft. below the normal bed level, when excavating for new pier foundations.

Bridge Opening Increased 438 Ft.

The four bridges involved in the recent work are identified as No. 160.39, 191.18, 192.27, and 196.12, all of the numbers being based on the line mileage from Los Angeles, Cal., and in the order mentioned, downstream with the Mojave river. These bridges were built originally in 1903 and 1904 when the line was constructed by the Los Angeles & Salt Lake Railroad, and were rebuilt or strengthened in 1916 following damage by a flood in that year.

The first of these structures, that at Mile Post 160.39, prior to the flood in 1938, consisted of seven 60-ft. deck plate girder spans resting on concrete abutments and piers, both the abutments and piers having spread footings carried down to an elevation 36 ft. or more below the base of rail, and from 22 to 28 ft. below the bed of the river channel. During the flood of March, 1938, this construction proved inadequate and pier No. 5 was

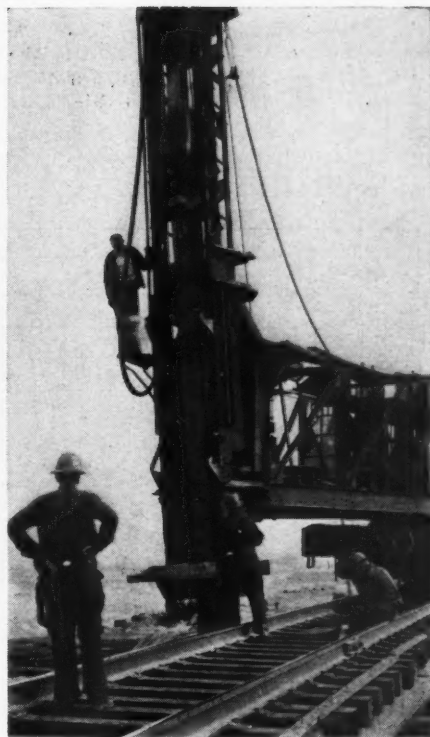
undermined. This indicated that the only safe course against the possibility of damage to one or more of the other piers in subsequent floods of equal or greater proportions was to reduce the force of the water by increasing the width of the waterway opening, the topography of the river bed and the level of the railroad generally being such as to make it impracticable to increase the clearance beneath the existing structure. Accordingly, at the time that pier No. 5 was reconstructed, the old abutment at the west end was cut down to a point below the normal river bed and the bridge was extended to the west a distance of approximately 438 ft. by the addition of eleven 45-ft. deck plate girder spans. These spans were supported on concrete piers, which, in turn, were anchored to and given support on H-section steel piling. Thus, whereas the former bridge provided an opening of 422 ft. 8 in., the enlarged structure has an opening of 861 ft. between the faces of abutment back walls.

The new piers of the bridge extension are simple concrete shafts with rounded ends and adequate reinforcing, each being 18 ft. 6 in. long in plan and 6 ft. 6 in. wide. All of them are 13 ft. high, which puts their base levels from 6 to 8 ft. below the normal channel level. The pile support and anchorage for each pier consist of two lines of steel piles on 3½-ft. centers, with the piles spaced 3 ft. center to center in each line. These piles, which are 14-in., 73-lb. H-sections, were driven to a depth of 77 ft. below the base of rail, and their tops were made to extend up into the pier masonry a distance of 9 ft. This construction provides anchorage for the piers to a depth of 62 to 64 ft. below the river bed level.

The one damaged pier of the original structure was replaced more or less in kind, with a tapered concrete shaft on a spread footing, and with approximately the same base level, but the new pier was founded on a grillage of H-section piles consisting of five rows of nine piles each, deeply embedded in the masonry at the top and penetrating to a depth of 40 ft. below its bottom limits. Thus, the new pier has anchorage extending to a depth about 80 ft. below the base of rail, which is about 40 ft. below the footing level of the pier it replaced.

The reconstruction at this bridge was carried out by erecting a temporary 60-ft. deck girder span on falsework piling over the site of the new pier constructed in the original bridge, and by building a shoo-fly on the south side of the alignment west of the original structure to permit the unrestricted movement of traffic during the construction of the west-end extension. Thus, the entire

**H-Section Steel
Bearing Piles,
Driven at All
Four Bridges,
Make Pier and
Abutment Foot-
ings Secure
Against Scour**



work at this structure was carried out without interference with traffic, such fouling or breaking of the track as became necessary being done between trains.

Long Truss Spans Replace Girders

Bridge No. 191.18, to the east of the one already described, and the first within Afton canyon, was originally 240 ft. long, and consisted of four 60-ft. deck plate girder spans supported on mass concrete piers and abutments. Here, all of the original piers and the south abutment, with base levels from 34 to 36 ft. below the base of rail, and from 14 to 16 ft. below the river bed level, had anchorage support on timber piling, driven apparently to refusal to a penetration of about 18 ft. at the time of construction. There were no piles under the east abutment, this being seated securely on firm cemented gravel.

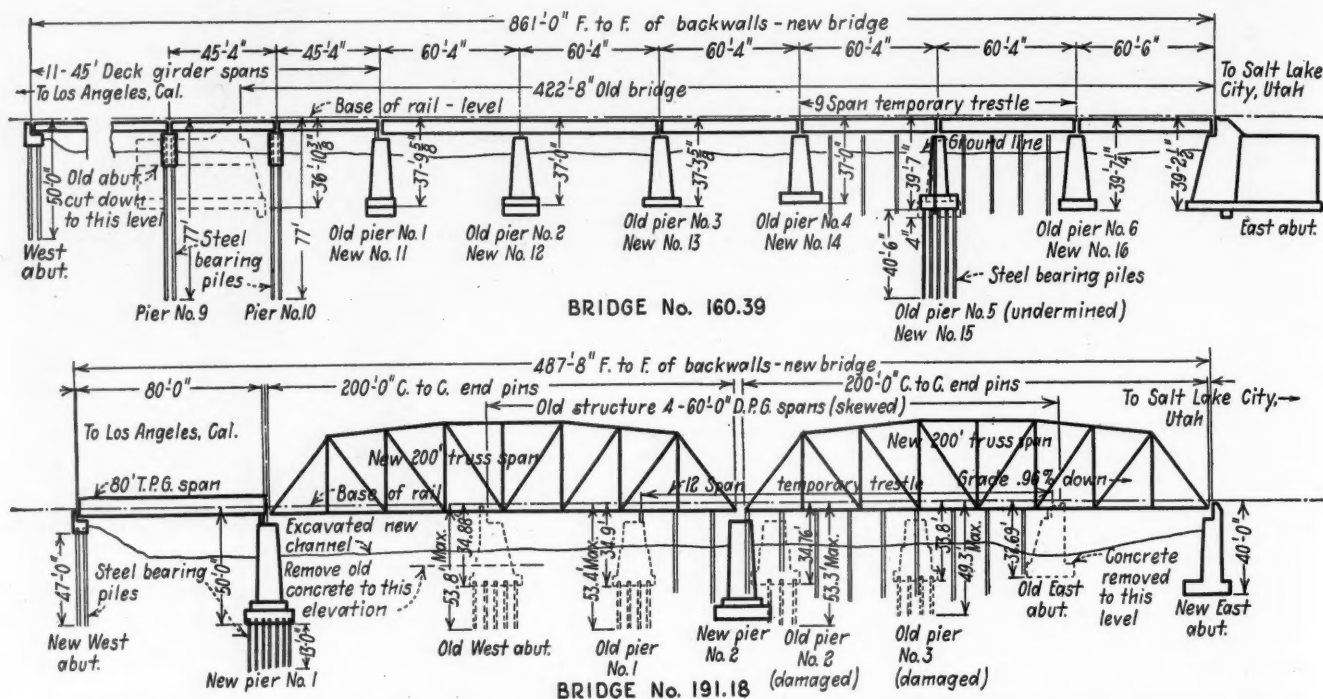
Secure as this structure appeared to be, two of its

**This Bridge No. 191.18,
487 Ft. 8 In. Wide, Re-
placed Four 60-Ft. Deck
Plate Girder Spans,
and Was Erected
Under Traffic**



piers were damaged by the flood in March, 1938, and the reconstruction of the bridge in kind would have called for their renewal. However, for the purpose of enlarging the waterway opening at this crossing by lengthening the structure, which seemed the only practical means to accomplish this purpose, the old structure was abandoned

re-established the old structure. However, for the same reasons that it was deemed desirable to enlarge the openings at Bridges No. 160.39 and 191.18, it was decided to enlarge the opening at this point by the provision of an entirely new structure. This structure, on the same alignment as the old structure, but with entirely new



Sketch Elevations of New Bridges No. 160.39 and 191.18, Super-imposed on Elevations of the Piers and Abutments of the Former Structures at These Points, Shown in Light Broken Lines

completely and was replaced by a new structure consisting of two 200-ft. through truss spans on deep concrete piers and abutments, supplemented by an 80-ft. through plate girder approach span at the west end. Thus, the 240-ft. opening of the former bridge was replaced by an opening 487 ft. 8 in. wide. Furthermore, to make the new east end abutment more secure, it was located approximately 70 ft. east of the former abutment, that much further removed from the normal river channel.

At this location, a firm, non-eroding foundation was found for the abutment at a level 40 ft. below the base of rail. A similar foundation for the pier supporting the adjacent ends of the new truss spans was found at a level 59 ft. below the base of rail. Therefore, these two structures, with firm and stable foundations, were not given support on piling. However, the large pier at the west end of the more westerly truss span, with a base elevation 50 ft. below the base of rail, and the abutment block at the extreme west end of the bridge, with a base elevation about 10 ft. below the base of rail, were supported on a system of H-section bearing piles, that beneath the former including seven rows of fourteen 10-in., 42-lb. piles having a penetration of about 13 ft. beneath the pier footing, and that beneath the latter including two rows of seven 12-in., 53-lb. piles having a penetration of about 47 ft. beneath the abutment masonry.

Third Bridge Renewed With Longer Spans

At Bridge No. 192.27, which consisted of two 80-ft. through plate girder spans on gravity-type concrete abutments and a center pier, the center pier was damaged by the flood and would have required replacement to have

piers and one new abutment, consists of a 200-ft. through truss span over the former channel, supplemented at its west end by a 150-ft. through truss span and two 30-ft. deck girder approach spans.

This new structure, which affords a waterway opening approximately 418 ft. wide, compared with the former opening of approximately 160 ft. is supported on new concrete piers and abutments. This new masonry, with the exception of the pier between the two approach spans and the west end abutment, was all founded on a hard, non-eroding material at level approximately 54 ft. below the base of rail, and about 35 ft. below the river bed. At this depth, the footings of the masonry are approximately 18 ft. deeper than those of the piers and abutment of the old bridge. Pier No. 1, supporting the abutting approach girder spans, unlike the other new piers, is essentially similar to those provided in the west end extension of Bridge No. 160.39, consisting of a relatively shallow reinforced concrete block, which is supported on two rows of four 14-in., 73-lb. H-section piles. These piles, which are imbedded deeply in the masonry, have a penetration of approximately 25 ft. below the pier footing, or 43 ft. below base of rail.

The west abutment of the bridge, like the west end abutments of Bridges No. 160.39 and 191.18, is of the shallow concrete block type, supported on two rows of structural steel piling, with four piles in each row. The piles, which are 12-in., 53-lb. sections, are encased in the abutment block at the top, and have a penetration of approximately 36 ft. beneath the block or to a depth of about 44 ft. below the base of rail. The old east abutment was revised for the new span.

At Bridge No. 196.12, the most easterly of those damaged in Afton canyon, difficulty was encountered with

the center pier of the bridge which consisted of two 80-ft. through plate girder spans supported on mass concrete masonry. With the situation here similar to that at the other three crossings already referred to, and dictating the desirability of increasing the waterway opening rather than the repair of the existing bridge, an entirely new structure was provided, enlarging the former 160-ft. opening to one approximately 469 ft. in width.

In accomplishing this, the old structure was abandoned completely, the old masonry being cut down to a point below the river bed, and was replaced by a structure consisting of two 200-ft. through truss spans, supplemented at the west end, as in the case of Bridge No. 192.27, by two 30-ft. deck plate girder approach spans. This involved the construction of new concrete masonry piers beneath the west ends of the truss spans, which are essentially similar to the new main piers built at Bridge No. 192.27, except that at this location, in spite of the fact that the pier footings were carried down a distance of 50 ft. below the base of rail, it was found desirable to support them on steel piling to make them secure against damage under any conditions of scour which might occur. Beneath the main channel pier there are a total of 136 piles in 8 rows of 17 each, these having penetration to an average depth of 21 ft. below the base of the masonry, and approximately 71 ft. below the base of rail.

The more westerly main pier is supported on and anchored to a system of 80 piles in 5 rows of 16 each. Here, 25-ft. piles were found sufficiently long, these providing penetration to a depth of approximately 17 ft. below the base of the masonry, and 67 ft. below the base of rail. These depths of pile penetration compare with the maximum depth of approximately 37 ft. of the damaged center pier of the old bridge. The west end abutment and approach pier, in practically every detail, are similar to the pile-supported abutment and pier at the west end of Bridge No. 192.27.

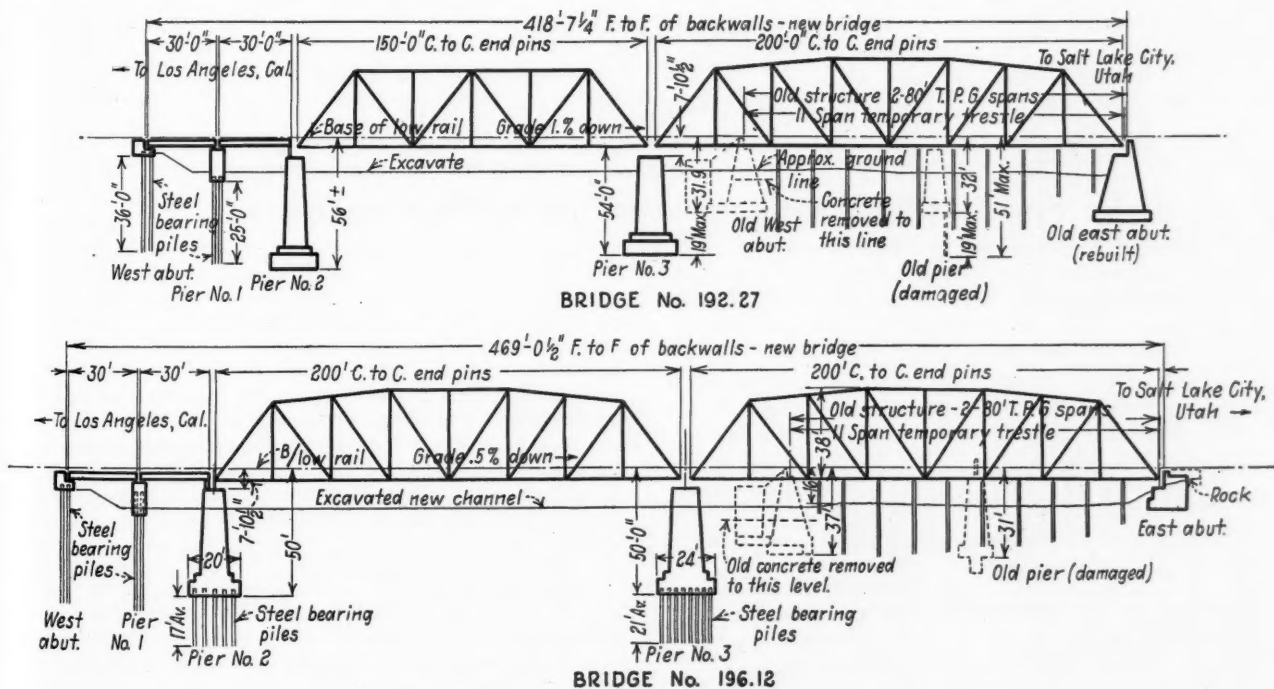
With the four damaged bridges supported on temporary falsework or replaced by timber trestles as necessary to maintain interrupted traffic following the flood,



This New Structure, No. 192.27, 418 Ft. Wide, Replaced Two 80-Ft. Through Plate Girder Spans

a careful study, including the driving of many test piles, was made to determine the probable flood requirements at each of the crossings and the most effective and economical means of meeting these requirements. When the decision had been made, in accordance with the final structures as already described, work was commenced, and was carried out simultaneously at all four crossings. The details of the construction methods followed varied somewhat with conditions but, with few exceptions, were essentially the same. The one fundamental consideration in carrying out the work was that it must not interfere with train operation, a condition which afforded maximum unrestricted working time of only about 1½ hr. between trains.

Wherever new deep piers or abutments were to be built, falsework bents were driven and girder spans were



Sketch Elevations of New Bridges No. 192.27 and 196.12, Super-imposed on Elevations of the Piers and Abutments of the Former Structures at These Points, Shown in Light Broken Lines

employed to span the excavation and construction work, this work, in practically all cases, being carried out within cofferdams of either timber or steel sheet piling and being done, insofar as possible, with crawler-mounted equipment operated in the river bed or on the higher adjacent ground. The principal exception to the use of such equipment was in the driving of the steel foundation piles, all of which was done with track-mounted pile drivers between train movements. Following the completion of individual piers or abutments, the cofferdam area involved was backfilled with coarse rock to provide further insurance against erosion or scour.

At all of the bridges, the trestlework built to carry traffic following the flood was utilized insofar as possible as falsework for the new steel erection. At Bridges No. 191.18 and 192.27 the trusses of the new spans were built first, independently of each other and of the new floor system, and the floor system was then installed, from one to three panels at a time as train conditions permitted, relieving the existing trestle deck. At Bridge No. 196.12, on the other hand, the floor systems of the truss spans were constructed first, in lengths of one to three panels at a time, on temporary falsework alongside the operated trestle, and were then jacked sidewise into place and wedged up to carry traffic as an equivalent section of the trestle deck was picked up as a unit by cranes and set out of the way. Following the completion of the deck, the trusses were erected on falsework and each span was thus completed as a whole.

The erection and maintenance of the falsework for the main channel spans, while a considerable item in the construction work, was simplified by the relatively small distance from base of rail to the river bed, and the further fact that the river was practically dry throughout the duration of the work. For the erection of the extension spans of the new bridges, which was usually over higher ground outside of the main channel, as well as for supporting the track in these areas, the falsework was confined almost entirely to multiple timber stringers and blocking resting directly on the ground, except, of course, through the areas where new piers were being constructed. Following the completion of the new superstructures, the falsework was removed and the ground level beneath the bridge extension spans was cut down with tractor-mounted grading equipment to the normal level of the river bed, providing the widened channel sought in the bridge reconstruction work.

One of the features of the new bridges, especially from

the standpoint of their adequacy and resistance to destruction by river bed saturation, erosion or scour, is the extensive use made of H-section steel piling for foundation anchorages. Reference to the use of the piles for anchorages is essentially correct because in no case was the actual bearing value of the soil in question, at least under normal condition, the problem being that of supporting and anchoring the masonry under severe conditions of scour and undermining which could not be prevented or guarded against with any degree of certainty under peak flood conditions, almost regardless of measures of protection and flood control taken.

The normal stability and bearing value of the material underlying the river bed became amply evident when determining the type of piles to be used beneath the bridge substructures, it being found that it was impossible to secure penetration of more than about 12 ft. with timber piles, without their destruction, and little more than this amount with concrete piles involving a metal shell and steel mandrel core. On the other hand, employing a Vulcan No. 1 single-acting hammer with a 5,000-lb. ram and a 36-in. stroke, little difficulty was encountered in securing penetration up to 50 ft. with the structural steel piling, even though the driving became exceedingly hard and slow at the greater depths.

Using a special follower with a wood cushion block under the hammer, the piles were driven to the top level desired beneath the base of rail, usually with no appreciable damage to their heads. Where necessary for any reason, the tops of the piles could be cut off to the elevation desired by means of an acetylene cutting torch. With piles of the maximum and other lengths desired available commercially, no splicing was required, and there was a minimum of cutting.

The planning, designing and construction work involved in building the four bridges described was carried out under the general direction of B. H. Prater, chief engineer of the Union Pacific, assisted by G. H. Trout, bridge engineer. The field work was in direct charge of W. C. Perkins, district engineer at Salt Lake City, Utah, and was supervised by L. W. Ashton, at the time assistant engineer, and now supervisor of bridges and buildings at Nampa, Idaho. The new substructures were built under contract by the Morrison-Knudsen Co., Inc., Boise, Idaho, while all of the new bridge steel was fabricated by the American Bridge Company. All of the pile driving and steel erection were carried out by railroad company bridge forces.

* * * *

Former Commissioner Woodlock on Election Issues

"It is not always that Presidential campaigns are fought upon domestic issues which are at one and the same time simple and fundamental. This time we have issues of this sort—three of them. They are all fundamental, but vary somewhat in simplicity, and in degree of importance. These are, in order of importance, the Supreme Court, the 'third term' and the relation of government to 'business.' In the order of simplicity the third term is easily first and the Supreme Court probably last. The criterion of simplicity is the degree of ease with which public opinion grasps the point at issue.

"Taking them in the order of simplicity, there is little that need be said on the question of the third term. No tradition perhaps is more firmly embedded in our national consciousness than that handed down to us by President Washington, and none that is more completely accordant with our theory and system of civil government . . .

"The relation of government to business, though less simple than the third term question, is a fairly plain issue which concerns everybody. The one conspicuous fact in the record of the New Deal is that, whatever may have been the intentions and the desires of the Administration, its actions have resulted in inhibiting a 'recovery' in business and industry. Taking together the legislation actually enacted in search of reform, the manner in which the reform measures have been administered and the spirit in which both have been conceived, as evinced by the long series of utterances by Administration spokesmen high and low over the last eight years, it is undeniable that reform has blocked recovery.

"Finally, it is equally undeniable that the philosophy of 'economic defeatism' rules the innermost councils of the New Dealers. How public opinion will react to this fact will depend upon the extent to which the spirit of personal initiative is still prevalent amongst our people . . ."

Thomas F. Woodlock Writing in the Wall Street Journal.

Cost Competition O. K. by I. C. C.

Costs railroad 11 cents to move oil and trucks 38 cents,
so railroad not required to boost rate above 20 cents

WASHINGTON, D. C.

RECOGNIZING the "relatively low cost of rail service" as an "inherent transportation advantage possessed by the rail carriers," the Interstate Commerce Commission has found that those railroad rates which have had competing motor carriers crying for help are not less than reasonable minimum rates for the transportation of petroleum and petroleum products from California to Arizona. The decision is in No. 27565, and it follows generally the recommendations of Examiner Frank E. Mullen's proposed report, which was reviewed in the *Railway Age* of September 2, 1939, page 352; oral arguments were covered in the issue of December 9, 1939, page 903.

The proceeding is one of those wherein the evidence included comparative cost data compiled in accordance with a formula developed by the late Arthur F. White, former head cost analyst and assistant director of the commission's Bureau of Statistics. At the aforementioned oral argument, counsel for the tank-truck operators said that his clients were "hanging on by the skin of their fingernails," and could survive only if the commission prescribed for them and competing railroads minimum rates which would have equaled more than three times the Southern Pacific's cost and twice the Atchison, Topeka & Santa Fe's cost of handling the traffic involved. Meeting the request of the truckers, the commission said, "would be the regulation in the interest of the high-cost agency rather than in the public interest."

Nevertheless the decision does permit the truckers to maintain their present rates which are below truck costs as shown by the White formula; although there is a finding that any further reduction in the truck rates would result in unreasonably low charges. In a brief dissent Commissioner Mahaffie noted how the majority had found that the rail rates are compensatory, but that "generally the costs of motor transportation to points also served by rail are considerably in excess of the motor rates." Mr. Mahaffie added: "In view of our duties under the Act, I do not understand the failure of the majority to complete the job by prescribing minimum motor rates based on those costs." The concurrences of Commissioners Lee, Rogers and Patterson in the result of the majority report are noted, while Commissioner Johnson did not participate in the disposition of the proceeding.

Truck Costs 38 Cents, Rail Costs 11 Cents

The decision opens with a brief review of the competitive struggles leading up to the institution of the investigation by the commission. It shows how rail rates on refined oil from Los Angeles, Calif., to Yuma, Ariz., have fallen from 40 cents per 100 lb. in 1929 to 20 cents at present. Meanwhile rates from Los Angeles to Phoenix, Ariz., and five other Arizona points have fallen from 70 cents to varying amounts from 33 to 64 cents. Phoenix is the most important destination point, and the Los Angeles-Phoenix rate is now 33 cents. The application of the White formula shows the Southern Pacific's cost of handling the Los Angeles-Phoenix traffic at 11.1 cents per 100 lb., excluding return on investment; and

at 13.7 cents, including a $5\frac{3}{4}$ per cent return. Costs over the longer route of the Santa Fe were shown respectively as 20.3 cents and 26.2 cents. One trucker's Los Angeles-Phoenix cost was shown as 38.8 cents, excluding return, and as 40 cents, including return; another trucker's costs were 37.6 cents and 38.4 cents, respectively. The Los Angeles-Phoenix truck rates are on parity with rail rates (33 cents) to on-rail destinations; and 38 cents to off-track points. The complete table of these comparative costs was published in the aforementioned review of the examiner's report in the issue of September 2, 1939.

The railroads did not challenge the accuracy of the results obtained by the use of the White formula; but they criticized the method used in that formula on the ground that it was unnecessarily complex and cost too much to apply. The Southern Pacific had other objections; and preferred as did the Santa Fe the formula devised by C. E. Day, engineer in charge of the S. P. Bureau of Transportation Research. The costs shown by the Day formula, the commission said, "do not differ materially from those obtained from the White formula."

Much of the remainder of the majority report is required to set forth the White formula and apply it to the rail and truck costs. With that done, the commission proceeds to discuss the positions of the parties. The truckers contended that the rates should be increased to a level which would permit both types of carriers to participate in the traffic. The railroads asserted that they were entitled to have their inherent advantages recognized and preserved; and contended that rates lawful under Part I "may not be increased for the purpose of protecting a transportation agency whose costs are so high as to prevent profitable operation at rates which are fully compensatory to the railroads." The interested shippers desired to retain both forms of transportation, but "none of them advocates and some actively oppose any increase in rail rates."

"Inherent Advantages"

Citing the statutory basis of its power to fix minimum rates, the commission notes how such power has been used "sparingly." The truckers had relied upon the Motor Carrier Act's declaration of policy, but the commission suggested that they should look also at the rate-making rules in Part I and in the Motor Carrier Act. They are practically identical, except that the latter contains the added direction that consideration shall be given "to the inherent advantages of transportation by such carriers."

"This additional provision," the report goes on, "was included to make certain that the motor carriers would be regulated with a view to the conditions inherent in the motor transportation industry without regard to the interest of any other mode of transportation. In fairness, we should give consideration to the inherent advantages of transportation by rail when rates by rail carriers are before us, particularly in a proceeding where competing rates of motor carriers are also under review. . . . The element of cost is not the only factor to be considered in
(Continued on page 186)

Reviews Estimated Consolidation and Coordination Economies

Study by Bureau of Statistics analyst brings together and compares various proposals made from time to time

WASHINGTON, D. C.

VARIOUS estimates which have been made from time to time as to possible savings to be derived from the consolidation or coordination of railroads and from the greater integration of their operations with other agencies of transportation have been brought together by the Interstate Commerce Commission's Bureau of Statistics in a review prepared by B. N. Behling, statistical analyst. The study, covering 174 mimeographed sheets, is Statement No. 4023; it has been issued as information and "has not been formally considered or adopted by the Interstate Commerce Commission."

The purpose of the study was to bring together in one place material which has heretofore been scattered and not generally accessible; because many of the estimates have been buried in records of proceedings before the I. C. C. or in other documents where they have been intermingled with other issues pertaining to the transportation problem. Mr. Behling did not find it possible "to verify or to test in any detailed fashion the various claims pro and con" that are reviewed. Neither have independent investigations been conducted which would permit counterestimates to be offered, although "opposing estimates on the same proposal have been noted in those cases where they have been found." Meanwhile Mr. Behling believes that "the orderly assemblage of estimates and opinions on the subject will be of value in stimulating interest in the matter of efficiency and economy in transportation organization and operation."

Scope of the Review

After an introductory discussion covering the movement for economy and efficiency and the obstacles to unification measures, the study takes up coordination. There are included reviews of the proposals of the federal coordinator of transportation and "other references to wasteful duplication and proposals for cooperation." Among the latter is the 1932 pamphlet wherein former Interstate Commerce Commissioner Mark W. Potter suggested that savings of \$500,000,000 a year might be realized "through cooperation and elimination of wasteful competition." The reviews of the coordinator's proposals covered his reports on the pooling of freight cars, unification of terminals, freight traffic, merchandise traffic, passenger service, modernization of repair shop facilities, handling and purchase of railway stores material, handling and disposition of scrap, transportation clearing house, and railroad fiscal and related work.

Dealing with consolidations, the study first considered general plans and estimates, such as the Prince Plan for seven regional completing systems, worked out under the direction of John W. Barriger, III, and announced in 1933; the review of the Prince Plan prepared under the direction of W. B. Poland at the request of the coordinator; the so-called Miller-Caskie plan for a single system, sponsored by Interstate Commerce Commissioner Miller and looked upon with favor by former Commis-

sioner Marion M. Caskie; and the Jenny six-system plan proposed in 1938 by L. A. Jenny, consulting engineer. The foregoing reviews are followed in turn by a discussion of the motives in consolidation and acquisition, and surveys of particular consolidation and coordination projects, both major and minor. Then comes the summary wherein Mr. Behling undertakes to bring the several estimates together for comparison. This summary follows in part:

Summary of Study

In spite of differences in the proposed scope and manner of unification, and although the estimates represent the judgments of various persons, there is a considerable degree of agreement in the amounts of anticipated savings in those cases where over-all estimates have been made. The reason for this consensus is not entirely clear, except insofar as all of the plans are based on the common idea of greater integration in the conduct of railroad transportation. It may be that the estimates have in some degree influenced one another.

The federal coordinator did not make any estimate of the total economies which might be achieved through coordination, and it has not been considered proper merely to add together the individual dollar estimates contained in or derived from data found in the studies made under his direction. For some of the coordinator's recommendations, no estimates of savings were given in dollars, and where such figures were submitted, they were regarded only as tentative and not final judgments. Moreover, as previously indicated, a simple aggregation of these figures presumably would involve some duplications. The particular aspects of coordination are closely related in the structure of railroad organization and operation and therefore cannot be completely isolated from each other.

In lieu of any aggregate amount, however, several of the individual estimates of the coordinator may be measured in terms of total railway operating expenses, for the purpose of affording a concrete expression of their significance. The recommendations of the coordinator which have been most widely debated are those relating to a national pool of railroad-owned freight cars, the integration of merchandise traffic with two competing companies, and the unification of freight terminals. It was estimated that \$100,000,000 might be saved by pooling all railroad-owned freight cars, and that another \$100,000,000 might be saved through the integrated handling of merchandise traffic. This amount, \$100,000,000, is equal to 4.03 and 3.10 per cent respectively of total operating expenses for all classes of steam railways in 1932 and 1937. Savings of about this same amount were estimated to be possible by means of various changes in the organization and conduct of passenger service. Savings from terminal unifications, estimated to be at least \$50,000,000, would be equal to 2.01 and 1.55 per cent respectively of total railway operating expenses in the two years mentioned above. In another study, which considered a long-range program for the modernization and relocation of major repair shops and their subsequent use on a joint basis, it was calculated that economies might eventually amount to nearly \$366,000,000. The latter figure, which was not regarded as possible of attainment except over a considerable period of time, is equivalent to 14.74 and 11.33 per cent of total railway operating expenses in 1932 and 1937, respectively. It may be noted that these estimated economies, cited here for illustrative purposes, do not cover all of the

recommendations for coordination or all of the estimated savings submitted by the coordinator.

Comparison of Comprehensive Estimates

The several comprehensive estimates which have been made by various persons are cited below. The anticipated savings have been shown as a percentage of the total operating expenses of all classes of steam railways (including switching and terminal companies) for the year 1937, which amounted to approximately \$3,230,500,000.

	Savings	Per Cent of 1937 operating expenses
Coordination estimate		
Estimate by Mark W. Potter.....	\$500,000,000	15.48
Consolidation plans		
Jenny plan of six regional systems.....	500,000,000	15.48
Prince plan of seven regional competing systems	743,489,000	23.01
Poland analysis of Prince plan		
1932 conditions	218,462,825	6.76
1929 conditions	288,858,715	8.94
Miller-Caskie single-system plan.....	500,000,000	15.48

Each \$100,000,000 of economy realized through unification measures would be equivalent to a reduction of about 3.1 per cent in the operating expenses of all roads for 1937, and savings of \$250,000,000 correspond to 7.74 per cent of total railway operating expenses in that year. The latter amount would have reduced the operating ratio for all classes of steam railways in 1937 from 74.76 to 68.98; and a saving of half a billion dollars would have made the operating ratio 63.05.

This study also covers a considerable number of unification proposals made by the particular carriers involved. For all such proposals wherein the estimated savings are substantial in amount, the economies have been calculated as a percentage of operating expenses for the year 1937. While the estimates were made at various times over the past twenty years, it seemed best to relate the estimates to operating expenses in a common year, and the year 1937 was used because it was a relatively good year considering the competitive circumstances now faced by the railroads.

It is not believed that any general conclusions bearing on the desirability of consolidation with respect to optimum size of systems or to maximization of savings can be drawn from a comparison of these cases. Rather, they must be regarded chiefly as case studies of individual situations. Some involve large roads of approximately equal size, while others involve the unification of a small road with a much larger one. In the latter case, it is to be expected that the percentage of savings to the operating expenses of the roads involved would be small in comparison with the same measure of savings when two roads of about equal size are combined. That is, the possibility of saving a very large part of the combined operating expenses when a small road like the D. T. & I. is joined with the Pennsylvania could not be very great. On the other hand, unified operation of such approximately equal-sized roads as the Northwestern and the Milwaukee or the Great Northern and the Northern Pacific would, other factors disregarded, be bound to yield a larger percentage of savings of their combined operating expenses.

Other circumstances still further vitiate any attempt to generalize from the data presented in these cases, to use one as a check upon the others, or to strike an average saving in operating expenses from the unification of railroad facilities and operations. Operating conditions and traffic densities vary greatly, and so also presumably would the economies from consolidation. Likewise, the possible savings from unification of two more or less parallel roads would presumably be much greater than when two interconnecting or end-to-end roads were combined.

Different Estimators and Different Bases

Moreover, it must be recognized that the various estimates have been made by different persons and at different times. It has been noted previously that the estimated savings have been related in all cases to operating expenses in 1937, and therefore to conditions in that year; but some of the estimates were probably made with substantially different conditions in view. Furthermore, some of the unifications to which the estimates apply were carried out before 1937, and in these cases the operating

expenses for that year reflect whatever reductions actually were made in operating expenses as a result of consolidation or other economy measures. Another difficulty is that the savings estimates apparently do not always cover the same things. In fact, some of the estimates are accompanied by statements to the effect that only certain types of savings were calculated, and other sources of saving are mentioned only in general terms. It may be that still other possibilities of economies were overlooked completely.

The same difficulties that have been mentioned, as well as some others, are presented if an attempt is made to compare the savings estimated by the railroads for the unifications projects they have sponsored with the estimates made by those who have advocated programs of large-scale consolidation. It may be noted, nevertheless, that there is an inconsistency between the claims of savings submitted by the carriers in support of unifications for which they have sought approval and the opinions sometimes expressed that general programs for the coordination and consolidation of the railroads offer no substantial opportunities for reduction of cost.

For whatever significance it may have, nine consolidation proposals for the unification of roads of more or less the same size have been selected for further examination. The data follow:

Railways	Operating expenses, 1937	Estimated savings
New Haven—Boston & Maine.....	\$98,317,372	\$2,143,000
Nickel Plate—Chesapeake & Ohio—Eric—Pere Marquette	186,852,230	6,000,000
Great Northern—Northern Pacific—Chicago, Burlington & Quincy.....	187,667,389	10,000,000
Northern Pacific—Milwaukee	139,149,106	5,000,000
Great Northern—Northern Pacific—Spokane, Portland and Seattle	119,401,365	10,142,811
Chicago and North Western—Milwaukee....	184,440,065	10,355,156
Kansas City Southern—Louisiana & Arkansas	13,076,525	504,000
Mobile & Ohio—Gulf, Mobile & Northern....	14,809,780	926,000
Atlantic City—West Jersey	8,374,556*	1,452,211
	\$952,088,388	\$46,523,178

* Expenses for 1931.

The estimated savings on these nine major projects amount to 4.89 per cent of the combined operating expenses in 1937 of the carriers involved. In most cases they were admitted to be minimum savings and not to include all sources of savings. If the above percentage is applied to the carriers as a whole, it is found that a saving of 4.89 per cent of the operating expenses of all classes of railroads would have amounted in 1937 to about \$157,972,436.

The latter figure is considerably lower than any of the estimated savings from consolidation or coordination as given above. The lowest of these figures (the Poland analysis of the Prince plan) amounts to about 6.8 per cent of total railroad operating expenses in 1937. The several estimates of \$500,000,000 are equal to about 15.5 per cent of 1937 operating expenses, or more than three times as much as the savings derived from the use of the estimated savings on the nine projects cited above.

Whether this means that the carriers' estimates are understated, as they sometimes have been said to be, or that the higher comprehensive estimates of others are too high, also frequently claimed, cannot be ascertained from the comparison. In fact, it does not follow that either conclusion is right, for the reason that any series of two-system consolidations may give quite different results as to savings than would a systematic and much more comprehensive plan of consolidation along regional lines or a single-system plan which included all the roads. The opportunities for economy would appear to be greater in the latter cases, but the potentialities might not be realized in actual net savings if diseconomies incident to greater size resulted in increased costs. Neither does it follow, because a few scattered proposals for consolidation indicate average savings of less than 5 per cent of operating expenses, that coordination vigorously pursued in all available directions would yield no greater savings.

Consolidation vs. Coordination

In considering the relative merits of consolidation and coordination, the questions naturally arise as to which method offers the greater opportunities for savings and which the stronger likelihood of acceptance and successful execution. The estimates

that have been made and which have been noted in this study afford no clear answer in regard to the first query. The only observation suggested by a comparison of the estimates is that the anticipated savings should not be greatly different whether resort is to coordination, regional consolidation, or a single-system plan. To a certain extent, this view of the matter is not unreasonable, inasmuch as the various proposals are founded on the common principles of greater cooperation and integration in the performance of railroad functions.

Respecting the second question, railroad managements have, for the most part, expressed a decided preference for consolidation. As shown in repeated instances above, railroad representatives sponsoring unifications of the latter type have often supported their proposals with estimates of savings to be derived from joint use of facilities, unification of operations, and avoidance of unnecessary duplication. But the railroads seldom have accepted estimates of savings when proposals for coordination, looking to the achievement of similar economies, have been advanced. Because of this indicated preference for consolidation, it has been inferred by some that consolidation is the only type of unification which it is practicable to hope for or to continue to promote. And yet, consolidations has not made very striking progress in recent years, partly no doubt because of unfavorable economic conditions during the past decade. On several occasions the commission has indicated a willingness to modify the terms of its formal consolidation plan. It would seem, therefore, that this alleged obstruction to consolidation has not been so serious an obstacle as frequently has been claimed.

So far as joint use of terminals, trackage, equipment, and other facilities is concerned, many believe that economies from coordination would be greater than from consolidation. In the former case, all roads reaching a common point or operating in a given area could be included, whereas consolidation usually involves only some of the roads having points of contact with each other. Consolidations worked out by particular carriers or any plan providing for a limited number of systems still would leave some opportunities for coordination by resort to common use of terminals, pooling of cars, joint trackage arrangements, consolidated ticket offices, unified repair facilities, and the like. A single unified system, in other words, is the only type of consolidation which would embrace within itself all opportunities for the coordination of railroad facilities and operations. It may also be argued that coordination has the further advantage of permitting other types of transportation facilities to be brought into close operating relationship with carriers by rail.

The consolidation movement, especially in the decade of the twenties, has been motivated in considerable measure by a desire to do something about the weak roads. More recently, the matter of economy has been given greater emphasis in consolidation proposals. The effort to improve the situation of financially weak roads through consolidation with the financially strong may not in some cases be consistent with the aim to achieve the most efficient organization and use of railroad facilities, for the reason that weak and strong elements are likely to be intermingled within every road and system. The overall characterization of roads as strong or weak, with reference to earning power and financial conditions, does not allow for the possibility that the latter roads may have some superior features in regard to conditions of operation, routes, physical layout, terminal location and facilities, or access to traffic, and that strong roads may be comparatively inferior in one or more of these respects. By implication, coordination in certain situations may permit in a more comprehensive manner than consolidation the retention of strong features and abandonment of weak elements throughout the entire railroad network.

Coordination More Flexible

Opposition to a formal plan of consolidation also has centered on the inability to predict transportation needs or conditions very far into the future. The commission repeatedly has requested that that part of section 5 which stipulates a general plan of consolidation be repealed, and has approved legislative proposals which would eliminate that requirement. What seem to be desirable consolidation proposals under any given circumstances may turn out later to be undesirable, when conditions may have changed in important respects. And yet, once system relation-

ships have become cemented, it may be difficult, if not impossible, to undo a consolidation. On the other hand, arrangements for coordination are more flexible and not so unalterable as consolidation.

But whatever the respective merits of consolidation and coordination may be, it is not necessary to select one to the exclusion of the other. Coordination of some phases of railroad transportation does not preclude consolidation where it is shown to be desirable. Both have a common objective and should be regarded as complementary rather than antagonistic. This thought was expressed and the problem of eliminating wastes in railroad operations was summarized by Commissioner Eastman at the hearings on the Omnibus Transportation Bill, in connection with his statement regarding the proposal to establish a temporary board to study the transportation situation and to promote improved conditions in transportation.

Cost Competition O.K. by I.C.C.

(Continued from page 183)

determining the reasonableness of the rate to be charged, but it may become the dominant factor where two different modes of transportation are competing for the same traffic. . . .

"The interests of the shippers and consumers of petroleum products . . . are in conflict with those of the carriers by motor vehicle. . . . They [the shippers] state that the rates should be established and maintained upon the basis of the full cost of the service plus a reasonable profit and oppose as unsound in principle and contrary to the interests of shippers and consumers the theory that a parity of rates should be established for the two competing forms of transportation upon the basis of the cost of the more expensive form of service.

"When the costs of performing certain transportation services do not greatly differ as between rail and motor carriers which are competing for the traffic, the rates of each carrier possibly may be successively reduced without undue harm so long as there is some margin between such rates and the costs. The rates, however, under the stress of such competition may decrease until they reach or even fall below the out-of-pocket cost, depending upon the intensity of the desire for the traffic. The competition, if unrestrained, tends to become destructive and if long continued under such conditions will decrease the financial stability of the carriers concerned and make it difficult for them to provide adequate and efficient service. In these circumstances the power to prescribe minimum rates may be appropriately exercised in order to prevent destructive competition and to stabilize rates at a level which will provide a proper return for the services rendered. If the costs of one transportation agency are so high as to prevent profitable operation at rates which permit the competing agency to perform satisfactory service to the public and to earn a good profit, it seems obvious that the high-cost agency in meeting the rates of the low-cost agency is attempting to compete on a non-profit basis. To direct the low-cost agency in these circumstances to increase its rates would be to disregard the admonition of both the Interstate Commerce Act and the Motor Carrier Act to give due consideration 'to the need in the public interest of adequate and efficient . . . transportation service at the lowest possible cost consistent with the furnishing of such service' . . ."

Further Cost Studies in Progress

With respect to the cost evidence the commission expressed the view that the allocations and apportionments involved therein were properly made. It went on to say: "The formulation of methods for determining costs

of service, however, is receiving more intensive study as the necessity for accurate and dependable cost figures has become apparent particularly in proceedings which involve rates on competitive traffic. Considerable progress has been made in these studies but much remains to be done before we can reach final conclusions as to the accuracy in all respects of the results obtained by the application of formulas so far devised. We are of the opinion that considerable weight should be given to the computed costs obtained in the present proceeding but we do not believe that specific rates should be prescribed here solely on the basis of such results."

Then comes the commission's aforementioned finding on the truck rates, i. e., that present rates will not be required to be increased, but further cuts would result in unreasonably low charges.

New Books...

✓ *Transportation: Economic Principles and Practices*, by Emory R. Johnson, Grover G. Huebner and G. Lloyd Wilson. 678 pages. 9 in. by 6 in. Bound in cloth. Published by D. Appleton-Century Company, New York and London, England. Price, \$4.

Here is a solid book by three distinguished faculty members of the Wharton School of the University of Pennsylvania. Messrs. Johnson and Huebner, it will be remembered, have a list of notable transportation works to their credit like "Principles of Railroad Transportation" (1916) and "Railroad Rates and Services" (1911), which were pioneers in the field, while Dr. Wilson has produced a steady stream of intelligent books and articles in more recent times and has taken intimate part in the search for solutions to transportation problems as an active participant in the work of the Associated Traffic Clubs of America.

This book is a compendium of descriptive information about the organization, practices and legal framework of each commercial agency of transport, including sections on history, mechanical and roadway characteristics, finance, services, rates, government relations and general outlook. All kinds of not-easily-found-elsewhere facts, such as the organization of the Railway Express Agency, method of payment for postal services, pipeline contracts, etc., have been set down by the authors and indexed in sufficient detail to make reference easy. Railroads are given the greater part of the book because of their basic importance, and detailed information on shipping documents, classification and rate-making principles is not repeated for other forms of transportation except where departures exist from railroad procedure.

Contrary to the approach of many text books written primarily for use in academic courses, this work is often frank when it touches on controversial subjects. And in its treatment of labor relations, government, competition, etc., the authors' viewpoint is, in your reviewer's opinion, in the main solidly bedded in good economic theory and common sense. It would be difficult to call the authors' criticism of legislation regarding railroad labor relations biased when they write, "... the commission cannot control the economic, financial, and business conditions that determine the number of men that can be employed and the amount that can justifiably be spent in providing employment. Social security is not made greater by attempting the impossible." No less outspoken is the declaration: "The Railway Labor Act of 1934 has increased the difficulties of the railroads during a most trying period and it is at least doubtful whether the statute has been of benefit to railway labor as a whole."

The trio are not very enthusiastic about the record of government relations with domestic water transportation, and initiate their chapter on the subject with the dry comment that "the relation of government to transportation by water is a two-fold one of aid and regulation, more emphasis being placed upon aid than upon regulation." As for inland navigation, it is their conclusion that "it is only under exceptional conditions that river barge transportation can be profitable, performed in competition

with railroad transportation." They express their critical opinion of direct federal barge operation with candor and call attention to the failure to include all costs in its accounting.

Of highway transportation subsidies, the authors write with less certainty, explaining that the pros and cons are still far too unsettled to permit a satisfactory text-book summary. But they do venture to assert that "it is also generally admitted, except by some of those directly concerned, that, in most states, contract and private carriers, who use the public highways as facilities for the conduct of business activities, do not bear their proportionate share of the expense of providing the facilities used. Transportation and carriers upon the highways, at least some of such carriers, have a part of the costs borne by the public, while those who use the railroads must pay the entire cost of service. This places the railroads at a disadvantage in competing with the highways." It is refreshing to read such a direct and simple factual statement from such a source, after the recent labored inconsistencies and elaborately rationalized prejudices of Mr. Eastman and Dr. C. S. Morgan in the same field.

Cavalcade of the Rails, by Frank P. Morse. 370 pages. 9 1/16 in. by 6 1/16 in. Bound in cloth. Published by E. P. Dutton & Company, Inc., New York. Price, \$3.75.

This is undoubtedly one of the best books on the history of railroading for popular consumption. In arranging his treatment of this crowded subject the author has happily avoided the usual chronological, step-by-step continuity and divided his subject matter into separate stories, each of which has an appealing "theme" about which to assemble diverse facts. At the same time he has succeeded in getting in almost every event and personality of real importance. In fact he has tracked down good yarns which somehow have been neglected by the popular books, such as the great Morgan reorganizations of the Nineties; the fascinating tale of the vicissitudes of the Moffat road and the construction of its famous tunnel by state funds; and the Harriman re-building of the Union Pacific.

In all there appears a background of careful, painstaking study and no mere re-hash of the work of earlier historians. Only a few inaccuracies appear—such as attributing the failure of the D. & H. to use its "Stourbridge Lion" to a lack of hauling power rather than to the inability of the trestle roadway to sustain the engine's weight—and these are more errors in interpretation than in fact.

Mr. Morse is an author of wide experience whose earlier books cover fields outside of transportation. But his insight of the problems and difficulties of the carriers shows a sympathetic and objective understanding which marks a valuable rooter for "our side." His last chapter, dealing with labor, regulation, taxation, competition and bald political "interference" is one of the clearest analyses of a complicated situation your reviewer has seen and an eloquent appeal for a "square deal."

He closes with: "There is, however, one ray of encouragement in the picture. Popular prejudice against the carriers is slowly yielding to an attitude of sympathy for a stricken industry. The American public is sentimental. It recalls with pride the pioneer days of the nation's youth when frontier hardships faded before the rush of the locomotive. It admires the fighting spirit of operating executives who, in the very shadow of bankruptcy, are now stepping up speed, service, efficiency and equipment to the highest standards of mainline history. This new mood may prove an important factor in future attempts to solve the railroad problem. The end of the down grade is not in sight, but there are still romance, color and drama in the story of the rails."

Freight Loss and Damage—Commodity Prices and Carloadings. 8 in. x 10 1/2 in. Pamphlet. Published by the Freight Claim Division of the Association of American Railroads. Price, 50 cents. Lewis Pilcher, secretary, Chicago.

This pamphlet is a study made by a special representative of the Division to show the effect of the rise and fall of commodity prices upon the amounts paid by the railroads in the settlement of claims for freight loss and damage with related carloadings data. A total of 137 statements and 50 graphs are included.

NEWS

Southern L. C. L. Ratings Slashed

Approx. 4,000 merchandise ratings lowered; reductions low as 55 p. c.

Since the announcement of reductions in some 4,000 merchandise ratings ranging from one to four classes applicable in Southern territory scheduled to be effective July 15 and September 1, as reported in the *Railway Age* of July 20, page 121, all roads operating in Official territory have decided to concur in effecting identical reductions in North-South inter-territorial class rates and carriers in Northwestern states have tentatively approved the reduced ratings for application in connection with class rates from "Western Trunk Line" territory to the South, publication of which is expected to be made effective September 1.

Approximately 600 of the reductions were published in Supplement 12 to the Consolidated Classification No. 13, effective July 15, 1940. The bulk of the remainder—a total of 3519 ratings—have been published in Items 6000 to 8586, inclusive, in Agent E. H. Dulaney's Exceptions No. 26, I. C. C. 83, to Southern Classification, to become effective September 1, 1940.

According to computations supplied *Railway Age* by J. G. Kerr, chairman, Southern Freight Association, Atlanta, Ga., the latter group of revisions comprise reductions in

918 first class ratings
1668 second class ratings
687 third class ratings
246 ratings below third class
3519

Ratings revisions involve:

2424 reductions of one class or less
976 reductions of more than one and up to two classes
119 reductions of more than two classes

Hypothecating a rate of \$1 as 100, class rates in the Southern classification are graded as follows:

First class	100 cents
Second class	85 cents
Third class	70 cents
Fourth class	55 cents
Fifth class	45 cents

Selecting a representative group of arti-

To Carry Pac. N. W. Petroleum Case to Supreme Court

Permission to appeal to the United States Supreme Court for a review of a three-judge court's ruling fixing minimum rates for the movement of petroleum products from tidewater to interior points in the Pacific Northwest was granted four northwest railroads, the Chicago, Milwaukee, St. Paul & Pacific, the Northern Pacific, the Spokane, Portland & Seattle, and the Union Pacific, at Portland, Ore., on July 24 by Federal Circuit Judge Bert E. Haney and district Judges James Alger Fee and Clyde McCulloch.

Two of these judges recently upheld an order of the Interstate Commerce Commission which fixed a minimum rate and denied the railroads permission to establish a rate of 25 cents a hundred on petroleum products shipped from marine storage points at Pacific northwest ports to Spokane and corresponding reductions to other interior points. The railroads contend that the low rates are necessary to place them on parity with water-truck transportation.

cles, the revisions to be effective September 1 will reduce ratings on dry goods, clothing and boots and shoes from first class to third class; chemicals and dye-stuffs first and second to third class; electrical appliances first and second to third class; agricultural insecticides and fungicides first, second and third class to fifth class; leather articles, artificial or imitation, first and second to third class; plumbers' goods, first and second to third class; and rubber articles, second to third class.

The reductions will affect approximately 45 per cent of total l. c. l. and "any quantity" ratings in Southern classification and some 223 carload ratings where necessary to maintain a c. l. rating lower than the revised l. c. l. level. Generally-speaking, the c. l. ratings are to be fixed one class below the respective l. c. l. ratings.

Milwaukee Awards Safety Certificates to Supervisors

Certificates for superior service were awarded by the Chicago, Milwaukee, St. Paul & Pacific on July 27 to 577 of its supervisors who have completed a 10-year period, 1930 to 1939, without a personal injury occurring to an employee under their jurisdiction.

Jacks Jobless Dole Up 115%

Finding more money in the kitty than was expected, Senate votes it away

The Senate, on July 29, by a voice vote, passed S. 3920, Senator Wagner's (Democrat of New York) bill which would increase benefit payments under the Railroad Unemployment Insurance Act by an estimated 115 per cent. This action came after heated debate in which Senator Reed, Republican of Kansas, assailed the measure, saying that it was "unworthy, unnecessary, and that it has no business before the Senate now", and Senator Gurney, Republican of South Dakota, tried but failed to convince his colleagues that they should adopt S. 3925, the bill which represents the carriers' views on the liberalization of the unemployment insurance benefit payments.

Senator Gurney's bill, which took the form of an amendment after he had been unsuccessful in getting the Senate interstate commerce committee to adopt it, was also defeated by a voice vote. This measure would increase benefit payments by an estimated 25 per cent and would establish a merit rating basis for the railroads so that the three per cent tax now paid by the carriers could be reduced if their employment record remains as satisfactory as it has been during the past few years.

Senator Wagner began the debate by explaining to the Senate some of the most salient features of the bill. In the first place, he said, the bill establishes a uniform benefit year for all claimants, in place of the present individual benefit year beginning with each claimant's first compensable half-month period. The present system, he continued, has caused a great deal of confusion, which is eliminated by providing for a uniform benefit year beginning with July 1, and ending with June 30 of the following year. "Incidentally", said the senator, "railway labor has accepted this change, although it is greatly to the disadvantage of some 29,000 employees. In order to make their contribution toward a better administration of the law, they are willing to make that sacrifice."

The senator went on to explain that the waiting period has been reduced from 15 days to seven days. During the first half-month registration period in which a claimant has seven or more days of unemployment, benefits will be payable for days of unemployment exceeding seven. In sub-

(Continued on page 194)

First Half's N. O. I. Was \$242,366,834

2.29 per cent return compares
with \$165,623,219 or 1.57
per cent last year

Class I railroads of the United States in the first six months of 1940 had a net railway operating income of \$242,366,834 which was at the annual rate of return of 2.29 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first six months of 1939, their net railway operating income was \$165,623,219 or 1.57 per cent, and in the first six months of 1930, it was \$369,416,251 or 3.46 per cent.

The June net railway operating income

per cent. Gross in the Eastern district for the six months totaled \$1,015,380,411, an increase of 15.3 per cent compared with 1939, but a decrease of 24.5 per cent compared with 1930. Operating expenses totaled \$729,540,864, an increase of 10.2 per cent above the same period in 1939, but a decrease of 28.1 per cent under the first six months of 1930. The Eastern district net for June was \$29,984,421 compared with \$22,725,018 in June, 1939, and \$38,056,351 in June, 1930.

In the Southern district the net for the first six months was \$33,645,621, or 2.16 per cent; for the same period in 1939, it amounted to \$31,688,070 or 2.05 per cent, and in 1930 it was \$42,941,024 or 2.64 per cent. Gross in the Southern district for the six months amounted to \$266,327,734, an increase of 7.5 per cent compared with the same period in 1939, but a decrease of 22.2 per cent under the same period in 1930. Operating expenses totaled \$202,-

CLASS I RAILROADS—UNITED STATES

Month of June

	1940	1939	1930
Total operating revenues	\$344,812,806	\$321,616,735	\$439,377,179
Total operating expenses	252,461,728	241,785,658	330,732,585
Taxes	34,177,427	29,498,145	30,580,933
Net railway operating income	47,419,440	39,166,788	67,683,471
Operating ratio—per cent	73.22	75.18	75.27
Rate of return on property investment	2.21%	1.83%	3.27%

Six Months Ended June 30

	1940	1939	1930
Total operating revenues	\$1,995,596,635	\$1,804,126,557	\$2,658,254,307
Total operating expenses	1,497,536,082	1,400,744,163	2,048,678,522
Taxes	189,219,222	172,109,281	177,366,289
Net railway operating income	242,366,834	165,623,219	369,416,251
Operating ratio—per cent	75.04	77.64	77.07
Rate of return on property investment	2.29%	1.57%	3.46%

was \$47,419,440 or 2.21 per cent, compared with \$39,166,788 or 1.83 per cent in June, 1939, and \$67,683,471 or 3.27 per cent on investment in June, 1930.

Gross operating revenues for the first six months totaled \$1,995,596,635 compared with \$1,804,126,557 for the same period in 1939, and \$2,658,254,307 for the same period in 1930, an increase of 10.6 per cent in 1940 above 1939, but 24.9 per cent below 1930. Operating expenses amounted to \$1,497,536,082 compared with \$1,400,744,163 for the same period in 1939, and \$2,048,678,522 for the same period in 1930—6.9 per cent above the former but 26.9 per cent below 1930.

Class I roads in the six months paid \$189,219,222 in taxes compared with \$172,109,281 in the same period in 1939, and \$177,366,289 in the same period in 1930. For June alone, the tax bill amounted to \$34,177,427, an increase of \$4,679,282 or 15.9 per cent above June, 1939. Twenty-five Class I roads failed to earn expenses and taxes in the first six months, of which eight were in the Eastern district, six in the Southern district and eleven in the Western district.

Gross for June amounted to \$344,812,806 compared with \$321,616,735 in June, 1939, and \$439,377,179 in June, 1930. Operating expenses totaled \$252,461,728 compared with \$241,785,658 in the same month in 1939, and \$330,732,585 in June, 1930.

Class I roads in the Eastern district for the six months had a net railway operating income of \$154,739,454, or 2.76 per cent. For the same period in 1939, their net was \$102,931,724 or 1.84 per cent, while in 1930 it was \$215,790,724 or 4.06

253,735, an increase of 8.4 per cent above the same period in 1939, but a decrease of 25.3 per cent under 1930. Class I roads in the Southern district for June had a net of \$3,816,727 compared with \$4,353,245 in June, 1939, and \$4,045,590 in June, 1930.

Class I roads in the Western district for the six months had a net of \$53,981,759 or 1.59 per cent; for the same period in 1939, their net amounted to \$31,003,425 or 0.91 per cent, and for the same period in 1930, it was \$110,684,503 or 2.97 per cent. Gross in the Western district for the six months amounted to \$713,888,490, an increase of 5.6 per cent above the same period in 1939, but a decrease of 26.5 per cent below the same period in 1930. Operating expenses totaled \$565,741,483, an increase of 2.5 per cent compared with the same period in 1939, but a decrease of 25.8 per cent under the same period in 1930. For June alone, the Class I roads of the Western district had a net of \$13,618,292 compared with \$12,088,525 in June, 1939, and \$25,581,530 in June, 1930.

Storm Washes Out Tracks in Iowa and Wisconsin

A 10-inch rainfall on July 26 washed out several pieces of track on the Chicago, Milwaukee, St. Paul & Pacific and the Chicago, Burlington & Quincy in Iowa and Wisconsin and caused trains to be rerouted until repairs could be made. Washouts on the Milwaukee occurred at several places on three divisions, including Dubuque, Ia., and Wauzeka. On the Burlington, 100 ft. of double track were washed out near Bagley, Wis.

Arguments End on R. E. A. Hours

Clerks' union bases its demand
for shorter week on fear
of losing members

Hearings were concluded on July 26 before the President's three-man emergency fact-finding board created to meet the situation caused by the recent threat of the Brotherhood of Railway Clerks to call a strike of the employees of the Railway Express Agency, to force the adoption of a 44-hour week in the express business, as well as certain changes in working agreements. Albert M. Hartung, vice president of the R. E. A. in charge of personnel, presented a summary of the case for the Agency, while Frank L. Mulholland, counsel for the Brotherhood of Railway Clerks, and George M. Harrison, its president, made the final presentation for the union. Under the Railway Labor Act the board has 30 days from the date of its appointment on July 10, or until August 10, to investigate and report its findings to the President.

Mr. Hartung told the board that the proposal of the Clerks for a shortened week came at a time when the country was busy preparing a large program of national defense and vitally needed the expedited facilities of express transportation, functioning at its highest efficiency. He went on to say that the Clerks had failed to show the board that they had any reason for asking for a 44-hour week other than that they wanted it. The R. E. A. vice president added that the institution of a 44-hour week for all R. E. A. employees would add more than \$4,250,000 annually to the Agency's payroll expense at a time of greatly reduced revenues.

Mr. Hartung also pointed out to the board that the granting of the 44-hour week to the International Brotherhood of Teamsters in New York had occurred in May, 1939, and was agreed to by the Agency because the express drivers were the only group in the city still working on the 48-hour week. It was on March 1, 1940, he continued, that the shortened week was extended to drivers in seven other large cities where they were also organized under the Teamsters Union. To remove any discrimination, he said, the Agency offered the same to clerk-member drivers in eight comparative cities, a concession which the Clerks' organization refused. The 48-hour week, added Mr. Hartung, still prevails generally in industry.

Mr. Mulholland argued that the 44-hour week was in line with modern social trends and that its institution would be no burden on the R. E. A., which can easily bear it. It was his contention that the added cost would not be more than \$2,000,000 a year and possibly less.

The real fear of the Brotherhood, according to Mr. Mulholland, is that the Teamsters will raid its membership in the Express Agency unless the alleged discrimination is immediately corrected. To refute the R. E. A.'s contention that the 48-hour week prevails generally in indus-

tries comparable to the express business, Mr. Mulholland pointed out that the employees of the freight forwarders are now operating under the 42-hour minimum of the Fair Labor Standards Act, while the Parcel Post truck drivers work a 40-hour week.

Mr. Harrison's contention to the board was that his group cannot survive as a "second-class labor organization." Mr. Harrison felt that it would be "disastrous" to allow the alleged discrimination to continue, but he thought that it was "most unfortunate that the company got itself into this hole." It was also his belief that the 44-hour week has been no burden on the company since it has been in force in the eight cities where the Teamsters represent the express drivers. At many points, he contended, the shortened work week could be accomplished by cutting off 10 minutes from each working day.

Mr. Harrison closed his argument by asserting that the "plea of poverty" from the express company "is nothing new to us." "The Agency," he continued, "is always in sack cloth and ashes and predicting poverty whenever we ask for some concession." Mr. Harrison then told the board that he wouldn't be before it if he didn't think that the R. E. A. was able to pay the increase. His closing plea was for the board to "save the Agency from itself."

Traffic Clubs to Meet in Philadelphia October 21-23

The Associated Traffic Clubs of America will hold its annual meeting in Philadelphia on October 21-23.

Budd Names Adviser on Air Transport

Ralph Budd, transportation member of the National Defense Advisory Commission, has appointed C. R. Smith, president, American Airlines, Inc., as an adviser on problems involving air transport.

Room Car Added to Fifth Avenue Special

A room similar to that used on the Twentieth Century Limited has been added to the Fifth Avenue Special, which the New York Central operates between Chicago and New York. The car contains ten roomettes and five double bedrooms.

Suspends All Rates Proposed to Meet Competition

The Interstate Commerce Commission suspended from July 29 until February 28, 1941, the operation of schedules proposing to reduce the rail rates on gasoline, kerosene and fuel oil, in tank cars, from South Atlantic ports and Richmond and other Virginia stations to destinations in the South Atlantic states, to meet motor-truck and water competition.

Status of C. & N. W. Shop Foremen

Because the American Railway Supervisors Association, Inc., has withdrawn the petition which instigated the proceeding, the Interstate Commerce Commission has discontinued that phase of its Ex Parte No. 72 (Sub-No. 1) investigation which

Inadequate Traffic, Not Congestion Danger, Is the Railroads' Worry

Directors of the Association of American Railroads attending last Friday's regular monthly meeting in Washington, D. C., were reported to have been more concerned about the need of their roads for additional traffic than about the ability of the railroads to handle what may be offered. While the equipment situation was not under formal discussion, the foregoing was said to have been the prevailing attitude as reflected in comments of the executives, their views on railroad readiness being generally like those expressed by M. J. Gormley, A. A. R. executive assistant, in his recent Duluth, Minn., address which was reported in the *Railway Age* of July 27, page 157.

It was stated at the A. A. R. that the directors took no newsworthy action, although it is understood that there was some informal discussion of labor's pending demand for vacations with pay.

had to do with the status under the Railway Labor Act of general foremen in the motive power and car departments of the Chicago & North Western.

Clinton, Davenport & Muscatine Gets Truck Certificate

With the dissent of Commissioner Rogers noted, the Interstate Commerce Commission, Division 5, has granted a certificate to the Clinton, Davenport & Muscatine for common-carrier trucking operations between Davenport, Iowa, and Clinton. The trucking service will take the place of an interurban electric railway freight service which the road was recently authorized to abandon.

Rock Island Seeks Motor Route

The Rock Island Motor Transit Company, a motor carrier affiliate of the Chicago, Rock Island & Pacific, has asked the Interstate Commerce Commission for authority to acquire certain operating rights and physical properties of the Clinton, Davenport & Muscatine. The route involved in the transaction is between Davenport, Iowa, and Muscatine and intermediate points of Moline, Ill., East Moline and Rock Island.

A. A. R. Booklet Records War Board Ceremony

The Association of American Railroads has issued an attractive 30-page brochure containing a record of ceremonies at Washington, D. C., on April 26 dedicating a bronze tablet placed in Union Station to recognize the achievements of the American railroads in 1917 under the Railroad War Board. The book contains, among other things, photographs of the War Board's members, the complete text of the addresses of J. J. Pelley, A. A. R.

president; Louis Johnson, at that time assistant Secretary of War, and Hale Holden, former chairman of the Southern Pacific. Following there appears a list of the guests and a copy of the secretary's report of the proceedings of a meeting on April 11, 1917, which resulted in the formation of the Railroad War Board.

Away-from-Home Subsistence Costs Deductible from Income Tax

The Bureau of Internal Revenue has ruled that locomotive engineers and other railroad trainmen, who are required to remain at away-from-home terminals in order to obtain necessary rest prior to making a further run or beginning a return run to the home terminal, are entitled to deduct for federal income tax purposes the cost of room rental and meals while away from home on such runs.

Electrical Engineering Exposition to Be Held This Winter

An Electrical Engineering Exposition will be held in the Convention hall, Philadelphia, Pa., January 27 to 31, inclusive, in connection with the regular mid-winter meetings of the American Institute of Electrical Engineers. The exposition is being managed by the International Exposition Company, Grand Central Palace, New York, which has planned 180 exhibit spaces. This is the first time that such an exposition has been held in conjunction with A. I. E. E. meetings.

Tariffs Suspended

The Interstate Commerce Commission suspended from July 28 until February 28, 1941, the operation of schedules proposing increased and reduced rates on steel or wrought iron pipe and related articles, carloads, from points in Official territory to destinations in Southwestern territory via ocean, rail-ocean, ocean-rail and rail-ocean-rail routes; and from Memphis, Tenn., Chicago, Milwaukee, Wis., St. Louis, Mo., and points taking the same rates, and from points in Official territory to Houston, Tex., and points grouped therewith, via routes of all descriptions.

P. R. R. Signaling Change Approved

The Interstate Commerce Commission, Division 3, has authorized the Pennsylvania to remove its block and interlocking station at Bunker Hill, Ind., and to install automatic interlocking without main-track derails.

The modifications were opposed by the Order of Railroad Telegraphers and "other employee organizations," who urged the imposition of "labor-protection" provisions. The commission rejected their plea but did not discuss the matter, referring to the expression of its view in another Pennsylvania case which was decided May 8. (See *Railway Age* of May 11, page 830.)

Minimum Coal Prices

Secretary of the Interior Harold L. Ickes on July 29 announced that Director H. A. Gray of the Bituminous Coal Division has completed work on the minimum prices for bituminous coal. Director Gray

announced that prices would become effective on September 3, 1940, subject to appeals to Secretary Ickes. Marketing rules and regulations will become effective simultaneously with the minimum prices.

The orders promulgating the minimum prices and marketing rules and announcing their effective date will be issued by Director Gray as soon as the task of duplicating the schedules and findings is completed, but all schedules will be in the mail by August 1, or shortly thereafter.

Four Hundred Rail Fans to Make 500-Mile Tour

Nearly 400 persons, whose hobbies are railroads, will be transported by the Chicago, Milwaukee, St. Paul & Pacific on a "rail-fan" sightseeing tour from Chicago to Marquette, Iowa, on August 4. The 500-mile tour is sponsored by the Chicago chapter of the Railway & Locomotive Historical Society of Model Engineers. The fans will be carried in a 12-car special train which will leave Chicago at 7:30 a. m. and will operate via Madison, Wis. On the return trip, which ends in Chicago before midnight, the train will operate through Dubuque, Iowa, and Savanna, Ill., so that only the three miles between the Chicago Union and the Western avenue stations in Chicago will be retraced.

At Marquette the rail-fans will inspect the Milwaukee roundhouse, a pontoon bridge and an exhibit of locomotives. A boat trip on the Mississippi will also be provided.

New York-Chicago Luxury Coach Trains Carry 260,000 First Year

The Pennsylvania's "Trail Blazer" and the New York Central's "Pacemaker," luxury, 17-hour, all-coach trains between New York and Chicago, have carried a total of more than 259,500 passengers since they were inaugurated July 28, 1939. Announcing results of the first year of operation of its "Trail Blazer," the Pennsylvania also revealed that it would extend its operation to Washington, D. C., and Baltimore, Md.

The "Trail Blazer" has carried a total of more than 132,000 passengers during the first year, of which 67,000 were eastbound and 65,000 westbound. The Pacemaker carried 127,514 passengers during the same period.

Special birthday celebrations were held on July 28 on the "Trail Blazer" leaving both New York and Chicago, with passengers sharing in the cakes and other party festivities. Twin-unit dining cars served special "Trail Blazer" turkey dinners while flowers and souvenir menus were presented to all passengers on board. Birthday celebrations were held prior to departure from both terminals.

The Pennsylvania points out that on more than 13 occasions the "Trail Blazer" carried over 500 passengers per train, the peak being on December 22, when 867 Christmas holiday travelers were on board the westbound unit.

The Pennsylvania also announces that it will extend "Trail Blazer" service to Washington, D. C., and Baltimore, Md., by the provision of special through cars which will make connections with the New

York-Chicago trains at Harrisburg, Pa. The coaches to be operated in the new extension of service will be of the same type as are now in the New York-Chicago run and meals of an economical table d'hôte type will be available in the diner-lounge car between Washington, Baltimore and Harrisburg.

April Bus Revenues 7.1 Per Cent Under 1939

Class I motor carriers of passengers reported April revenues of \$8,012,552 as compared with \$8,625,638 in April, 1939, a decrease of 7.1 per cent, according to the latest compilation prepared by the In-

	Passenger Revenue		Passengers Carried	
	April, 1940	April, 1939	April, 1940	April, 1939
New England Region	\$372,709	\$433,824	939,198	931,116
Middle Atlantic Region	1,187,514	1,332,769	2,614,207	2,373,420
Central Region	1,415,573	1,587,658	2,420,653	1,797,225
Southern Region	1,924,078	1,972,234	2,387,521	2,304,268
Northwestern Region	297,823	335,035	268,042	294,279
Mid-Western Region	663,977	688,519	504,262	532,220
Southwestern Region	1,005,621	1,079,433	1,091,193	1,140,701
Rocky Mountain Region	78,443	85,017	67,473	78,178
Pacific Region	1,066,814	1,111,149	1,390,518	1,251,201

terstate Commerce Commission's Bureau of Statistics from 145 monthly reports representing 146 bus operators. Meanwhile, however, passengers carried increased 9.2 per cent—from 10,702,608 in April, 1939, to 11,683,067 in April, this year.

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

Rate and Classification Probe

Having reached an understanding with the railroads whereby the information sought will be furnished voluntarily, the Interstate Commerce Commission has vacated and set aside its order of January 9 in the No. 28310 general investigation of the consolidated freight classification. At the same time the commission has extended until September 1 the deadline date for the filing of information called for in the other order of January 9 which applied to both the aforementioned 28310 proceeding and the No. 28300 general investigation of the class rate structure.

The understanding which brought about the vacation of the order applying only to 28310 was confirmed in a recent letter which Commissioner Aitchison addressed jointly to A. F. Cleveland, vice-president of the Association of American Railroads, and Clarence A. Miller, general counsel of the American Short Line Railroad Association. These orders of January 9 and the data which they called for were reviewed in the *Railway Age* of January 20, page 170.

Allowances for Privately-Owned Tank Cars

The Interstate Commerce Commission has instituted upon its own motion an investigation to determine whether the practices involved under the terms and operation of the lease contract between the General American Tank Car Corporation, the El Dorado Oil Works and the El Dorado Terminal Company for the use of

tank cars leased from General American and furnished by El Dorado to railroads for the transportation of cocoanut oil are unlawful. The investigation will also determine whether a reasonable charge or allowance may be paid by the carriers for the use of the tank cars.

A case involving the situation which now interests the commission was before the United States Supreme Court early this year, as noted in the *Railway Age* of January 13, page 145. The Supreme Court held that the United States District Court had jurisdiction, but that it should withhold action pending a decision by the commission as to the reasonableness and legal-

ity of the practices involved. The investigation is docketed as No. 28515, and the dates for hearings will be announced later.

Wheeler Submits Additional Reports

Senator Wheeler, Democrat of Montana, and Senator Truman, Democrat of Missouri, from the Senate interstate commerce subcommittee investigating railroads and holding companies, have submitted to the Senate four reports dealing with financial transactions surrounding the acquisition of the Missouri Pacific by the Alleghany Corporation. Earlier this year these senators submitted several other reports outlining the results of their committee's activities in this field.

The four reports carry the following titles:

1. "Alleghany Corporation: Acquisition of Missouri Pacific Railroad Company—Devices Used to Secure Consent of Missouri Public Service Commission."
2. "Missouri Pacific System: Intercompany Dividends and Advances—1915-1930."
3. "Missouri Pacific System—Acquisition of the Fort Worth Belt Railway Company."
4. "Market Operations with Railroad Funds—Missouri Pacific Purchases of System Securities and Related Accounting Practices."

Joint Board Reports on Motor Applications of Railroads

Subject to the usual four conditions designed to insure that the highway service will be auxiliary to or supplemental of rail service, Joint Board No. 184, composed of Will M. Maupin of Nebraska and J. J. Murphy of South Dakota, has recommended that the Interstate Commerce Commission grant certificates to the Chicago & North Western for common carrier trucking operations on four routes between points in South Dakota and Nebraska. The case is docketed as No. MC-42614 (Sub-No. 5). Meanwhile in No. MC-29130 (Sub-No.

8) Joint Board No. 36, composed of Andrew F. Schoepel of Kansas and John C. Hightower of Missouri, would have the commission grant the Rock Island Motor Transit Company, affiliate of the Chicago, Rock Island & Pacific, a certificate for common-carrier trucking operations between Atchison, Kans., and Trenton, Mo. Because all points proposed to be served are relatively small, this board would not impose that condition which stipulates that all traffic handled by highway must be subject to a prior or subsequent haul by rail. It would, however, impose the others.

June Truck Loadings Continue Near 1940 Peak

The volume of revenue freight transported by motor truck in June represented a slight decrease under the near-record tonnage hauled in May, and a substantial increase over the volume moved during June of last year, according to loading reports compiled by American Trucking Associations, Inc.

Comparable reports received from 254 motor carriers in 40 states and the District of Columbia showed that the June volume was 0.9 per cent under that of May, but 15.1 per cent above that of June, 1939. The reporting carriers transported an aggregate of 1,343,013 tons in June, as against 1,354,615 tons in May, and 1,166,529 tons in June of last year. The A. T. A. index figure, computed on the basis of the 1936 monthly average tonnage of the reporting carriers as representing 100, stood at 137.79 for June; in May, the index was 139.99; in June, 1939, it was 118.84.

Approximately 71 per cent of all the freight transported during the month was reported by carriers of "general merchandise." The volume of general merchandise carried decreased 2.1 per cent under May, but represented a 15.1 per cent increase over June, 1939. Transporters of petroleum products, accounting for slightly more than 12 per cent of the total tonnage reported, showed an increase of 2.9 per cent in June, as compared with May, and an increase of 22.3 per cent over June of

last year. Movement of new automobiles and trucks, constituting 7.4 per cent of the total tonnage, decreased 9.9 per cent under May, but represented an increase of 31.8 per cent over movements of June of last year. Iron and steel products represented 3.4 per cent of the total reported tonnage. The volume of these commodities increased 15.3 per cent over May, and 54 per cent over June, 1939. A little more than 5 per cent of the total tonnage reported was miscellaneous commodities, including tobacco, textile products, bottles, building materials, coal, cement and household goods. Transportation of these commodities increased 13.3 per cent over May and 17.1 per cent over June, 1939.

P. W. A. Aids to Air Transport

The nation's air defenses and air travel facilities have been improved as the result of 383 P. W. A. projects in 42 States, Alaska, Hawaii, Virgin Islands, and the Canal Zone, costing nearly sixty million dollars, according to a recent report from Public Works Commissioner Colonel E. W. Clark to Federal Works Administrator John M. Carmody.

All but 11 projects of this type have been completed, Mr. Clark revealed. There have been 29 non-federal projects costing \$10,711,878, for which P. W. A. made outright grants of 45 per cent. These projects include hangars, administration buildings, and landing fields, chiefly in connection with municipal and county airports.

The federal projects have been constructed by the Commerce, War, Navy and Treasury Departments and the Civil Aeronautics Authority with funds allocated to them by the Public Works Administration. These 354 Federal projects costing \$48,318,201 include new or improved landing fields, administration buildings, radio equipment, airplanes and airplane parts, lighting of airways in every section of the country, laboratory and experimental work, officers' quarters, and machine shops.

Colonel Clark stated that while the federal projects constructed by the service departments are considered as part of the

national defense, the non-federal projects involving the construction of airports, owned and operated by cities and counties, could be, in case of national emergency, turned over for use by the federal government.

Waymen's Union President Retires

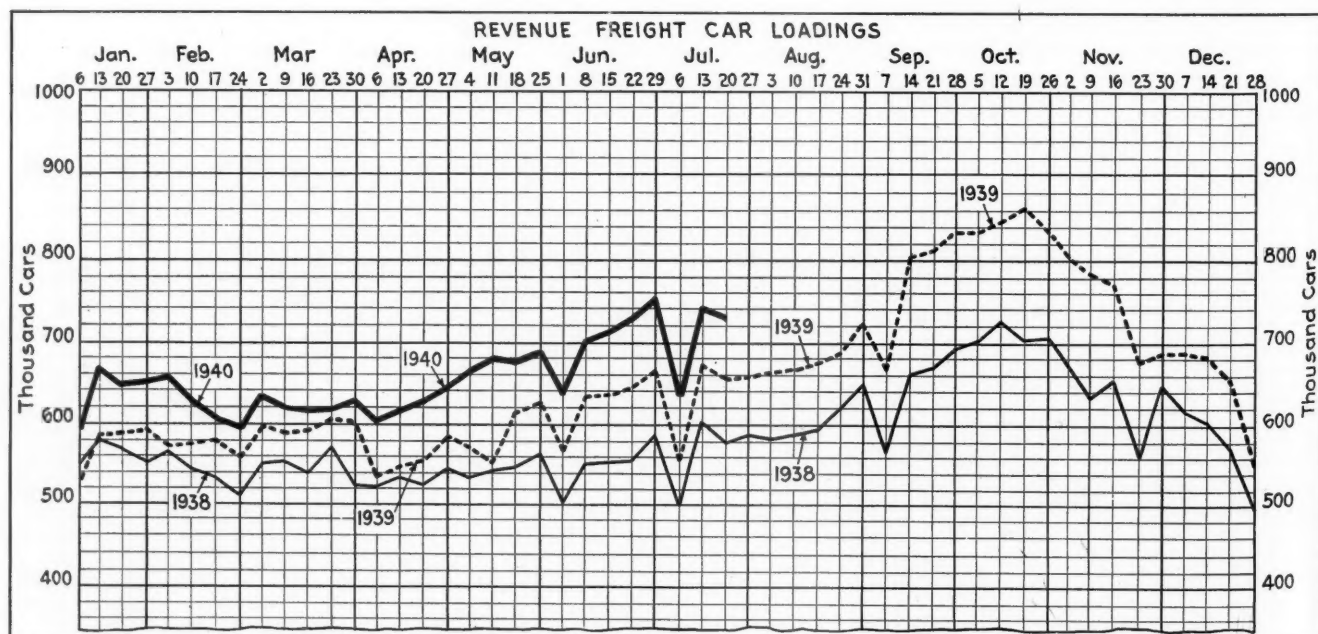
Frederick H. Fljodzal, president of the Brotherhood of Maintenance of Way Employees for the past 18 years, announced his voluntary retirement at the twenty-seventh regular convention of the organization held at Quebec, Que., July 15 to 23. Elmer E. Milliman, secretary-treasurer of the union, was elected to succeed him.

Mr. Fljodzal was born in Iceland in 1868 and entered railroad service in 1886 in the construction department of the Great Northern. In 1898, after eight years employment with street railways, he went with the Canadian Northern (now Canadian National) as a construction foreman. In 1900, he became a general foreman for the same road and in 1920 was made a track supervisor. His first officership with the maintenance of way brotherhood came in 1905 when he was elected general chairman for the Canadian Northern. In 1914 he became secretary of the executive board of the entire brotherhood and in 1916 chairman of the board. The year 1918 saw his election as vice-president and in 1922 he became president, which position he will hold until September 1, the effective date of his retirement.

Freight Car Loading

Loading of revenue freight for the week ended July 27 totaled 718,489 cars, the Association of American Railroads announced on August 1. This was a decrease of 11,408 cars, or 1.6 per cent, under the preceding week, but an increase of 62,958 cars, or 9.6 per cent, over the comparable 1939 week and an increase of 129,792 cars, or 22 per cent, over the same week in 1938.

As reported in last week's issue, loading of revenue freight for the week ended July 20, totaled 729,897 cars, and the summary



for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For Week Ended Saturday, July 20			
Districts	1940	1939	1938
Eastern	148,905	134,120	119,228
Allegheny	157,583	127,122	105,184
Pocahontas	48,134	46,759	41,096
Southern	94,744	91,604	84,156
Northwestern ..	124,052	102,185	82,285
Central Western ..	110,803	103,963	103,003
Southwestern ..	45,676	45,912	45,866
Total Western Districts	280,531	252,060	231,154
Total All Roads	729,897	651,665	580,818
Commodities			
Grain and grain products	52,590	46,389	53,341
Live stock	10,568	11,574	11,201
Coal	121,020	107,265	93,136
Coke	10,416	6,098	4,326
Forest products.	34,315	32,522	26,764
Ore	70,866	42,596	22,105
Merchandise l.c.l.	147,933	152,310	146,219
Miscellaneous ..	282,189	252,911	223,726
July 20	729,897	651,665	580,818
July 13	740,465	669,888	602,445
July 6	636,901	555,152	500,981
June 29	752,326	661,404	588,880
June 22	728,096	638,534	558,788
Cumulative Total, 29 Weeks	19,013,658	17,140,505	15,914,876

In Canada.—Carloading for the week ended July 20 totaled 57,125, compared with 57,238 in previous week and 47,657 in the comparable 1939 week, according to the summary of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
July 20, 1940	57,125	24,087
July 13, 1940	57,238	22,699
July 6, 1940	51,907	23,179
July 22, 1939	47,657	18,384
Cumulative Totals for Canada:		
July 20, 1940	1,466,203	712,381
July 22, 1939	1,254,203	595,077
July 23, 1938	1,270,877	594,240

41 Killed in Head-on Collision on P. R. R. Near Akron, O.

Forty-one persons were killed when a gasoline-electric rail motor car collided head-on with a freight train on the Pennsylvania at Cuyahoga Falls, Ohio, near Akron on July 31. Only 3 persons, the engineman, conductor and a trainman—the latter riding deadhead, out of the 44 in the motor car survived. Both trains were moving on a single track and the collision caused the gasoline-electric car to catch fire.

The motor car left Hudson at 5:49 p. m. with a meet order which provided that it take the siding just North of Silver Lake to await the freight train and for further orders before again entering the main track. The freight train, running from Columbus to Cleveland, carried the same meet order which instructed it to proceed on the main track to Hudson.

According to E. W. Smith, vice-president of the Pennsylvania, "the crew of the motor car not only disregarded their orders to stop at Silver Lake but in continuing on the main track failed to secure permission to proceed from the block operator at Hudson. With the engineman and conductor of the motor car badly injured in Akron hospitals and with the baggageman dead, it is impossible to determine now why these orders were disobeyed. The motor car was equipped with all safety appliances including dead man control so that if the

engineman had become incapacitated for any reason the car would have come to an immediate stop. In the collision the front end of the motor car was telescoped by the lead locomotive of the freight train and fire broke out in the motor car. The freight train was not derailed."

Exhibitors at Fall Mechanical Meetings

An analysis of the accompanying preliminary list of companies who will exhibit at the co-ordinated mechanical association meetings, scheduled to be held at the Hotel Sherman, Chicago, October 22 to 25, inclusive, indicates clearly that almost all types of railway mechanical devices and supplies are well represented. An excellent exhibit is apparently assured which will go far to supplement, from an educational standpoint, the constructive papers and committee reports presented at individual association meetings.

Referring to the list of exhibitors, which includes only those who have contracted for space with the Allied Railway Supply Association as of July 30, it will be noted that 84 companies are already represented, which compares with a total of 101 companies in October, 1937, when the last exhibit was held. Individual space assignments now total 283, or five more than those sold in 1937. A limited number of spaces are still available and can be secured by addressing Secretary J. E. Gettrus, Post Office Box 5522, Chicago.

The railway mechanical associations which will hold annual meetings during the four-day period, October 22 to 25, include the Car Department Officers' Association, Locomotive Maintenance Officers' Association, Master Boiler Makers' Association, and the Railway Fuel & Traveling Engineers' Association.

Preliminary List of Exhibitors at Co-ordinated Mechanical Association Meeting at Chicago, October 22 to 25, Inclusive

Air Reduction Sales Company, New York
 Ajax Hand Brake Company, Chicago
 American Arch Company, Inc., New York
 American Locomotive Company, New York
 Apex Tool & Cutter Company, Inc., The, Shelton, Conn.
 Arrow Tools, Inc., Chicago
 Ashton Valve Company, The, Boston (Cambridge), Mass.
 Baldwin Locomotive Works, The, Philadelphia, Pa.
 Barco Manufacturing Company, Chicago
 Beaver Pipe Tools, Inc., Warren, Ohio
 Berkley Machine Works & Foundry Co., Inc., Norfolk, Va.
 Buckeye Steel Castings Co., The, Columbus, Ohio
 Byers Company, A. M., Pittsburgh, Pa.
 Collins & Aikman Corporation, New York
 Corley Company, The, Jersey City, N. J.
 Crane Company, Chicago
 Dearborn Chemical Company, Chicago
 Detroit Lubricator Company, Detroit, Mich.
 Duff-Norton Manufacturing Company, The, Pittsburgh, Pa.
 De-Wel Steel Products Company, Chicago
 Edna Brass Manufacturing Company, The, Cincinnati, Ohio
 Ewald Iron Company, Louisville, Ky.
 Flannery Bolt Company, Bridgeville, Pa.
 Franklin Railway Supply Co., Inc., New York
 Gilg, Henry F., Pittsburgh, Pa.
 Graham-White Sander Corporation, Roanoke, Va.
 Griffin Wheel Company, Chicago
 Grip Nut Company, Chicago
 Hanna Stoker Company, The, Cincinnati, Ohio
 Holland Company, Chicago
 Hunt-Spiller Manufacturing Corporation, South Boston, Mass.
 Huron Manufacturing Company, Detroit, Mich.
 International Correspondence Schools, Scranton, Pa.
 Johns-Manville Sales Corporation, New York
 Lehon Company, The, Chicago
 Lewis Bolt & Nut Co., Minneapolis, Minn.
 Lima Locomotive Works, Inc., Lima, Ohio
 Locomotive Firebox Company, Chicago

Lunkenheimer Company, The, Cincinnati, Ohio
 MacLean-Fogg Lock Nut Company, Chicago
 Mall Tool Company, Chicago
 Miner, Inc., W. H., Chicago
 Monarch Packing & Supply Co., Chicago
 Morton Manufacturing Company, Chicago
 Nathan Manufacturing Company, New York
 National Aluminate Corporation, Chicago
 Oakite Products, Inc., New York
 Ohio Injector Company of Illinois, The, Chicago
 Okadee Company, Chicago
 O'Malley Valve Company, Edward, Chicago
 Oxweld Railroad Service Company, The, Chicago
 Paxton-Mitchell Company, Omaha, Neb.
 Penn Iron & Steel Company, Creighton, Pa.
 Pocket List of Railroad Officials, The, New York
 Portable Equipment Company, Chicago
 Prime Manufacturing Company, The, Milwaukee, Wis.
 Pyle-National Company, The, Chicago
 Railway Purchases and Stores, Chicago
 Ryerson, & Son, Inc., Joseph T., Chicago
 Sellers, Wm. & Co., Inc., Philadelphia, Pa.
 Simmons-Boardman Publishing Corporation, New York
 Sinkler, Inc., Joseph Inc., Chicago
 Spring Packing Corporation, Chicago
 Standard Brake Shoe & Foundry Company, Chicago
 Standard Car Sales, Inc., Chicago
 Standard Car Truck Company, Chicago
 Standard Stoker Co., Inc., The, New York
 Superheater Company, The, New York
 Superior Hand Brake Company, Chicago
 Superior Railway Products Corporation, Pittsburgh, Pa.
 Swanson Company, The, Chicago
 Talmage Manufacturing Co., The, Cleveland, Ohio
 Timken Roller Bearing Company, The, Canton, Ohio
 T-Z Railway Equipment Company, Chicago
 Union Asbestos & Rubber Co., Chicago
 United States Metallic Packing Company, Philadelphia, Pa.
 Unit Truck Corporation, Jersey City, N. J.
 Valve Pilot Corporation, New York
 Vapor Car Heating Company, Inc., Chicago
 Viloco Railway Equipment Company, Chicago
 Westinghouse Air Brake Company, Wilmerding, Pa.
 Wilson Engineering Corporation Chicago
 Wine Railway Appliance Company, The, Toledo, Ohio
 Worthington Pump & Machinery Corp., Harrison, N. J.

Water-Rail Rates from Virginia Ports to North

Examiner C. W. Griffin has recommended in a proposed report that the Interstate Commerce Commission require adjustments in some of the class rates applicable over water-rail routes from Virginia ports to points in Trunk Line and New England territories, which are assailed in complaints of the State Corporation Commission of Virginia and the State Port Authority of Virginia. The proceeding is docketed as No. 28256, and the examiner's recommended findings are set forth in the proposed report as follows:

Upon this record the Commission should find that the first class water-rail rates assailed between Norfolk, Newport News, Portsmouth and West Point and points in trunk-line and New England territories, and between Richmond and Hopewell and points in trunk-line and New England territories on the east of the line or lines of the Pennsylvania Railroad Company extending from Baltimore through Harrisburg, Pa., and Elmira, N. Y., to Sodus Point, N. Y., will be unreasonable for the future to the extent they exceed rates made 7 cents less than the contemporaneous first-class all-rail rates between Norfolk and the same points, the ocean-rail rates on the lower classes to be made the same percentages of the prescribed first-class ocean-rail rates as observed in the all-rail class rate adjustment, and the prescribed ocean-rail rates to be subject to the official classification and exceptions thereto in the same manner as the all-rail class rates.

The Commission should further find that the water-rail class rates assailed between Richmond and Hopewell and points in trunk-line territory west of the line or lines of the Pennsylvania Railroad Company extending from Baltimore through Harrisburg, Pa., and Elmira to Sodus Point, N. Y., and between Richmond, Hopewell, Norfolk, Newport News, Portsmouth and West Point and points in Maryland, Delaware and Virginia on the so-called Del-Mar-Va peninsula, are not unreasonable.

Inasmuch as the Baltimore-Harrisburg-Elmira-Sodus Point line is arbitrary it ought not to be too rigidly observed in disregard of competitive or commercial conditions.

The findings herein apply to water-rail rates

between the Virginia ports and points in trunk-line territory over routes through the ports of Baltimore, Philadelphia and New York, and between the Virginia ports and points in New England over routes through the ports of New York and Boston.

Jacks Jobless Dole Up 115%

(Continued from page 188)

sequent registration periods in the same benefit year, benefits will be payable for days of unemployment exceeding four days. An important result of the bill, he emphasized, is to reduce from 38 days to 22 days the time intervening between the first day of unemployment and receipt of the first benefit check.

Also, according to Senator Wagner, the range of benefit rates per 14 days of unemployment is increased from the equivalent of \$12.25 to \$21 under the present law, to \$17.50 to \$40 under the present bill, for unemployed workers having comparable base-year compensation. He also called the Senate's attention to the fact that the maximum duration of benefit payments in any benefit year is increased from 80 days under the present law to 100 days under the bill. He went on to explain that since the bill increases the number of compensable days in a registration period, this amendment was necessary in order to maintain the present 21-week duration of benefits.

After stating that the present benefit payments are lower than those in several states, Senator Wagner told the Senate that the average annual benefit load under the bill over a period of years would be about \$50,000,000, which would leave "an amply safe margin of reserve".

Commenting on Senator Gurney's proposed amendment, Senator Wagner said that if adopted, it would "mean simply that we would be giving the railroads a yearly benefit of at least of \$20,000,000—perhaps as much as \$40,000,000—which would be taken away from the workers, whereas the workers, even under the amendment, would receive very inadequate benefit increases not exceeding \$4,000,000 in a year like the present."

Answering the charge of the senator from South Dakota that the bill should not be in the Senate for consideration, Senator Wagner replied by saying that he was not ashamed of the measure. "I have been trying for a long while to bring a better day to those who are more unfortunate than you and I", continued the senator. "We are talking about giving a dollar or two or three or four dollars a week to a worker who is unemployed. That is the 'outrageous' thing we are doing here. But on the contrary it is said that we must save the railroads this \$20,000,000 or perhaps \$40,000,000 per year, by reducing the tax to two or one per cent. It is argued we have to treat railroads differently from any other industry in the country."

"I hope the time will come when we can reduce the tax. I hope the time will come soon, and it is coming sometime, when we will solve this question of unemployment, when we will not need to raise any money for unemployment insurance. But as long as unemployment is here we must treat the unemployed worker fairly. We are giving

him little enough. Do not take it out of him. If we are to give a subsidy to the railroads, let us make it a general assessment, and not an assessment only on the unemployed workers."

Senator Gurney, in explaining his bill in detail, criticized the present Railroad Retirement Act and the Railroad Unemployment Insurance Act in that both acts authorize the Railroad Retirement Board to virtually spend as much money for administrative expenses as it sees fit. He went on to say that railroad representatives have characterized the procedure under the Acts as furnishing a bank account with an original deposit of over \$18,000,000 and recurring annual deposits of some \$6,000,000 to the Railroad Retirement Board with a blank check book. Senator Gurney said that he could not help but concur in that characterization.

After pointing out that the railroads are now doing much of the work required under the Unemployment Insurance Act, Senator Gurney charged that the Board should be able to administer the Act for much less than the 10 per cent of the taxes which is now allowed. Also, he stated that the expenditures under the Retirement Act are reviewed by the Bureau of the Budget and come from both the employer and the employee, while under the Unemployment Insurance Act there is no review of the administrative expenditures and the funds come entirely from the employer. For this reason he felt there should be a curb on the amount of funds that can be used to administer the latter act.

He also called the Senate's attention to the fact that during House hearings on the annual appropriation bill for the Board, Murray W. Latimer, its chairman, admitted that it was difficult to separate the expenses of the two acts and that the Board could have a man working on its Unemployment Insurance payroll and doing work for the Retirement Act section. In reply to a question as to how long this type of procedure could continue, Senator Gurney quoted Mr. Latimer as saying, "I suppose we could get by until the General Accounting Office caught up with us". It was Senator Gurney's contention that the enactment of S. 3920 would perpetuate such a state of affairs.

"It is my personal thought", concluded Senator Gurney, "that now is not the time to experiment with a statute which has been in operation less than one year. However, as both the railroads and their employees agree that some changes are highly desirable, I am willing to waive my own thoughts in the matter and support reasonable modifications. But we must realize that our railroads are in the front line of our national defense, and we should not completely ignore them in this or any other matter, nor should we permit our enthusiasm for social gains to allow the operations of this system under most favorable conditions to warp our judgment. I wish to reiterate the statement that no one knows what the average cost of the benefits under the present act or under either of the two proposals before the Senate will be."

Senator Reed, who signed the minority report favoring the Gurney bill, denied that if that bill were enacted, the railroads would be getting a gift from the govern-

ment. "How would they benefit?", he asked. "Let me say to the Senator from New York that at one time there were 2,000,000 railroad employees. At the lowest ebb the number went down to about 900,000. Railroad employment in the last year or so has been stabilized. Consequently there has been a minimum drain upon the unemployment insurance fund. That condition is not certain to continue in the future."

"The Senator's bill has no business here, in the first place, and if it had not been here, there would have been no substitute, I am a signer of the report on the substitute, being a member of the committee. The distinguished Senator from New York will doubtless remember the conversation in the committee when some of us expressed the hope that the Senator from New York and the Senator from South Dakota could agree upon a bill. The Senator from New York informed me this morning that they were unable to do so."

Senator Austin, Republican of Vermont, who also signed the minority report of the committee favoring the Gurney bill, spoke at considerable length criticizing the Wagner bill and advocating the railroad version.

Meanwhile, similar legislation is pending before the House committee on interstate and foreign commerce. Hearings have been held on a companion measure to Senator Wagner's and Senator Gurney's bills, but no action has been taken by the committee.

Rules Governing Classification of Employees

The Interstate Commerce Commission has issued a new order consolidating, with minor revisions, its requirements in connection with rules governing the classification of steam railway employees and reports of their service and compensation. The new order, according to the notice from I. C. C. Secretary W. P. Bartel, does not change the current method of reporting railway wage statistics to the commission's Bureau of Statistics.

Mr. Bartel also said that the new order was deemed necessary because of numerous requests for copies of the order of April 18, 1921, which prescribed the rules; and that of October 20, 1932, which amended the 1921 order.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

- AIR BRAKE ASSOCIATION.—R. P. Ives, 350 Fifth Ave., New York, N. Y.
- ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.
- AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., 327 S. La Salle St., Chicago, Ill.
- AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo. Annual meeting, October 22-24, 1940, Hollywood Beach, Fla.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y. Annual meeting, September 9-10, 1940. September 9, aboard Canada S. S. Lines' Steamer Tadooussac; September 10, at Manoir Richelieu, Murray Bay, Quebec, Canada.
- AMERICAN ASSOCIATION OF RAILROAD SUPERIN-

TENDENTS.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, October 15-17, 1940, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. G. Reed, Union Pacific R. R., 1416 Dodge St., Omaha, Neb.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. H. Hunt, Tower Bldg., Washington, D. C. Annual meeting, November 11-12, 1940, Hotel Morrison, Chicago, Ill.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39 St., New York, N. Y. Fall meeting, September 3-5, 1940, Davenport Hotel, Spokane, Wash. Annual meeting, December 2-6, 1940, New York, N. Y. Railroad Division.—C. L. Combes, *Railway Age*, 30 Church St., New York, N. Y.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, September 22-26, 1940, The Greenbrier, White Sulphur Springs, W. Va.

AMERICAN WOOD PRESERVERS ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, February 4-6, 1941, Brown Hotel, Louisville, Ky.

ASSOCIATION OF AMERICAN RAILROADS.—H. J.

Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y. Annual meeting, October 15-16, 1940, Congress Hotel, Chicago, Ill.

Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, September 10-12, 1940, Chateau Laurier, Ottawa, Ontario, Canada.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 29, 1940, Hotel Sherman, Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, October 8-10, 1940, Wardman Park Hotel, Washington, D. C.

Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 30, 1940, Hotel Sherman, Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1941, Denver, Colo.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, October 10-11, 1940, Roanoke, Va.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, 1941, Denver, Colo.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcell Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, Mo.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept.,

* * * *



P. R. R. Shop Employees Salute Their Own American Flag

Employees of the Pennsylvania's car shops at the Greenville (Jersey City) freight yard gathered at noon on July 25 in a patriotic ceremony marking the unfurling on a new flagpole which they built themselves in the shop of an American flag which they purchased through voluntary subscription. The more than 175 contributors to the flag fund joined in an oath of allegiance and the singing of the "Star Spangled Banner." A similar flag-raising ceremony was held on July 2 at the Meadows Shops of the road in Kearny, N. J., following donations by 154 employees for the purchase of the flag and the construction of a pole by the men.

C. B. & O., Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y. Annual meeting, September 26, 1940.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION (See Locomotive Maintenance Officers' Association).

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—J. E. Goodwin, Gen. Foreman, Loco. Dept., Missouri Pacific R. R., No. Little Rock, (P. O. Little Rock), Ark. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, December 10-12, 1940, Miami, Fla.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, and second Friday of each alternate month at Hotel Hayward, Los Angeles.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, September 10-12, 1940, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. and C. Company, 59 E. Van Buren St., Chicago, Ill. Exhibit in connection with Roadmasters' and Maintenance of Way Association Convention, September 9-12, 1940, Hotel Stevens, Chicago, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y. Annual meeting, October 12-13, 1940, Hotel Buena Vista, Biloxi, Miss.

WESTERN RAILWAY CLUB.—W. L. Fox (Executive Secretary), Room 822, 310 South Michi-

gan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

Orders Continue Upward Trend

July equipment purchases eclipse each month this year in three classes of rolling stock

Domestic orders were placed in July for 51 locomotives (11 steam and 40 Diesel-electric); 5,846 freight cars and 36 passenger-train cars, according to reports published weekly in the *Railway Age*. Comparison reveals that each of these three totals exceeds orders placed in any month this year.

The 51 locomotives ordered compare with 4 units ordered in July, 1939, and,

the cumulative total for 1940 to 16,431 cars, or 81 per cent in excess of the 9,077 cars purchased in the same period of 1939. No freight cars were ordered in July of that year.

The carriers bought 36 passenger-train cars in July, compared with 39 in July of 1939. This total includes 24 coaches booked for a railroad-purchaser not yet reported. It brings this year's total to 59 passenger-train cars, as compared with 174 for the comparable period of 1939.

An American builder also received an order for one locomotive for export during July.

As of July 31 there were inquiries outstanding for, or contemplated purchases of, a total of 64 locomotives (43 steam and 21 Diesel-electric); 9,291 freight cars and 193 passenger-train cars.

FREIGHT CARS

THE NORFOLK & WESTERN has placed an order with The Ralston Steel Car Company, Columbus, Ohio, for 500 box cars.

THE CHICAGO & NORTH WESTERN has been authorized by the Federal District Court to acquire sixty 70-ton covered hopper cars from the General American

Domestic Equipment Orders Reported in Issues of The Railway Age in July 1940

LOCOMOTIVES			
Date	Name of Company	No. Type	Builder
July 13	Chicago, Rock Island & Pacific	1 Diesel-electric	Electro-Motive Corp.
July 20	Baltimore & Ohio	25 Diesel-electric Sw.	Electro-Motive Corp.
July 20	Illinois Central	1 Diesel-electric	Electro-Motive Corp.
July 20	Atchison, Topeka & Santa Fe	10 4-8-4	Baldwin Locomotive Works
July 27	Alaska R. R.	1 4-6-2	Baldwin Locomotive Works
July 27	Reading	5 Diesel-electric Sw.	Baldwin Locomotive Works
		5 Diesel-electric Sw.	Electro-Motive Corp.
		3 Diesel-electric Sw.	American Locomotive Co.
FREIGHT CARS			
July 6	Chesapeake & Ohio	300 Box	American Car & Foundry Co.
		200 Box	General American
		200 Box	Mt. Vernon Car Mfg. Co.
		200 Box	Pullman-Standard
		100 Box	Greenville Steel Car Co.
		50 Caboose	St. Louis Car Co.
		50 Caboose	Magor Car Co.
		50 Box	Greenville Steel Car Co.
July 20	Norfolk & Western	100 Refrigerator	Company Shops
July 20	American Refrigerator Transit Co.	500 Hopper coal	Virginia Bridge Co.
July 20	Norfolk & Western	500 Hopper coal	Bethlehem Steel Co.
July 20	Virginian	500 Hopper	Company Shops
July 20	American Car & Foundry Co.	10 Tank	Company Shops
July 20	General American Transportation Corp.	1 Tank	Company Shops
July 27	Louisville & Nashville	25 Cov. hopper	Pullman-Standard
July 27	Newburgh & South Shore	60 Ore	Pullman-Standard
July 27	Illinois Central	1,000 Box	Pullman-Standard
		1,000 Box	General American
		500 Box	American Car & Foundry Co.
		500 Automobile	Mt. Vernon Car Mfg. Co.
PASSENGER-TRAIN CARS			
July 13	Chicago, Rock Island & Pacific	2 Baggage & express	Pullman-Standard
		1 Chair	Pullman-Standard
		1 Pullman	Pullman-Standard
		1 Dining-Observation-Lounge	Pullman-Standard
July 20	Purchaser not yet disclosed	24 Coaches	Edward G. Budd Mfg. Co.
July 20	Illinois Central	1 Observation-Lounge	Pullman-Standard
		1 Diner	Pullman-Standard
		4 Coach	Pullman-Standard
		1 Combination Coach	Pullman-Standard

added to the total of 185 locomotives for the first six months of the year (erroneously stated as 187 in the summary article in the July 6 issue), bring the record for the year thus far to 236 (101 steam and 135 Diesel-electric), or 52 per cent in excess of the 156 locomotives ordered in the corresponding period of 1939.

The freight car figure of 5,846 brings

Transportation Corporation under a 15-year lease-purchase plan.

IRON AND STEEL

THE WESTERN MARYLAND has ordered 2,000 tons of rails, dividing the order between the Carnegie-Illinois Steel Corporation and the Bethlehem Steel Co.

Supply Trade

John E. Wright has been appointed sales agent for **American Steel Foundries**, at St. Louis, Mo., succeeding **Walter C. Doering**, vice-president, whose death was reported in the *Railway Age* of June 29.

William C. Tyler, formerly mechanical engineer and superintendent of the manufacturing division of the **William E. Pratt Manufacturing Company**, has been appointed chief mechanical engineer of the **Klasing Car Brake Company**, Joliet, Ill.

The **Research Products Corporation**, Madison, Wis., has appointed the **Allied Heating Products Company**, 225 Brokers Exchange building, Norfolk, Va., as its agent for the state of Virginia to handle the distribution of the Research (Walton) Air Filters.

A. Taurman, with headquarters at 848 South 42nd Street, Birmingham, Ala., has joined the **O. M. Edwards Co.** of Syracuse, N. Y. Mr. Taurman's career includes a number of years employment with the Southern as an apprentice, machinist, foreman, draftsman, and shop engineer, successively; as resident inspector with the **American Locomotive Company** at Richmond, Va., and with the **New York Air Brake Co.**, at Watertown, N. Y.

The **Rails Company**, New Haven, Conn., has acquired from the **Rail Maintenance Corporation**, New York, the exclusive rights to the strip-welding process for building up rail ends. Railroads may now make strip welds under license agreements with the Rails Company, or the work may be done under contract either by this company directly or through sub-licenses issued to existing contracting organizations. In licensing railroads to use the strip-welding process The Rails Company is prepared to supervise the work and to permit the use of a grinding attachment which was especially designed for use in connection with this process.

OBITUARY

Herbert W. Wolff, senior vice-president in charge of sales, **American Car & Foundry Co.**, with headquarters at New York, died on July 27, at his summer home at Grayling, Mich., at the age of 66, after an illness of a year's duration. Mr. Wolff was born in Hamilton, Ont., on December 27, 1873, and received his early education in the public schools of Detroit, Mich. He began his business career with the **Michigan Car Company** in Detroit, which company was later consolidated with the **Peninsular Car Company** under the title **Michigan-Peninsular Car Company**.

Upon organization of the **American Car & Foundry Co.** in 1899, Mr. Wolff went to St. Louis, Mo., as chief mechanical engineer of the new corporation. In 1912 he was appointed assistant vice-president and in 1916 was elected vice-president in charge of sales in the Chicago district. During the World War period Mr. Wolff

spent a great deal of time in Washington, D. C., working with the United States Railroad Administration and the Military



Herbert W. Wolff

Railways Division of the War Department in co-ordinating industrial facilities. In 1925 Mr. Wolff was elected a director of A. C. F. and in the same year was made executive head of sales of the entire corporation, with office in New York. In 1935 he was appointed senior vice-president of the company, the position he was holding at the time of his death.

Construction

ALTON & SOUTHERN.—Construction will be begun this summer on a 5,000,000 bu. grain elevator on the east bank of the Mississippi river, two miles south of East St. Louis, Ill. The elevator will cost approximately \$1,000,000 and is expected to be completed in time to house the 1940 corn crop.

CHESAPEAKE & OHIO.—This company has asked the Interstate Commerce Commission to extend from August 1, 1940, to August 1, 1942, the time within which it may complete the construction of its Huff Creek subdivision, extending from Huffs-ville, W. Va., to Cyclone, 9.6 miles.

DENVER & RIO GRANDE WESTERN.—A contract amounting to \$70,177 has been awarded the **Larson Construction Company**, Denver, Colo., for the construction of a highway bridge over the D. & R. G. W. and Eagle river near Dowd, Colo. The bridge will consist of three continuous deck plate girder spans totalling 290 ft. 6 in. in length and two 50-ft. I-beam approach spans on the east end and one 42-ft. I-beam approach span on the west end. The bridge will provide a 30-ft. clear roadway and a clearance over the railroad of 25 ft. 6 in.

GREAT NORTHERN.—The Bureau of Reclamation, Coulee Dam, Wash., has awarded a contract amounting to \$499,319 to the **American Bridge Company**, Pittsburgh, Pa., for the construction of the superstructure of the Kettle Falls railroad bridge across the Columbia river near Kettle

Falls, Wash. The contract covers the furnishing and erecting of the steel and the construction of the timber railroad deck. The ties, rails and electrical equipment will be furnished by the Bureau of Reclamation. The principal details of this bridge were given in the *Railway Age* of July 6, on page 51, and the relocation of tracks in connection with this project was described in the *Railway Age* of June 22, on page 1141.

MICHIGAN CENTRAL.—The Michigan State Highway Department has awarded a contract amounting to \$169,824 to the **W. J. Storen Company**, Detroit, Mich., for the construction of a new bridge for three tracks of the Michigan Central over Michigan avenue in that city. The new bridge will consist of two three-track, semi-through girder spans each 69 ft. 9 in. long which will cross Michigan avenue at an angle of approximately 62 deg., supported on a reinforced concrete center pier and abutments. The work includes also the construction of temporary trestles and the removal of the old bridge.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—This road, with company forces, is replacing four light through truss bridges on the Atlanta division with I-beam or deck plate girder spans supported on the old substructures and additional piers, at a total cost of approximately \$260,000. In addition, slight changes in alignment are being made in connection with the work at two of these bridges, at a cost of approximately \$33,900.

NEW YORK CENTRAL.—A contract has been awarded to the **Duffy Construction Company**, New York, for repairs to a building at 46 Tenth avenue, New York, recently damaged by fire, and repairs to buildings at 42, 44, and 48 Tenth avenue, which were damaged as a result of the fire at No. 46.

TEXAS & PACIFIC.—A contract has been awarded **Nathan Wohfeld**, Dallas, Tex., for the construction of a passenger station on Market street in Shreveport, La. The station will be a two-story structure approximately 76 ft. by 66 ft. in size, with an exterior of limestone masonry on a granite base and the entire building, including railroad traffic and commercial offices on the second floor will be air-conditioned. Included in the construction work will be a 24-ft. concourse along one side of the station and a train shed approximately 800 ft. in length. The total cost of the work will be about \$180,000.

WACO, BEAUMONT, TRINITY & SABINE.—Division 4 of the Interstate Commerce Commission has issued an order requesting this company to show cause why a certificate of convenience and necessity authorizing it to construct lines extending from Livingston, Tex., to Port Arthur, 100 miles, and from Weldon, Tex., to Waco, 109 miles, should not be vacated and canceled. The notice of the commission points out that although the certificate was issued on July 12, 1927, no portion of the tracks have ever been laid and there appears to be little likelihood that any will be as the company is now in bankruptcy.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Director dies.*—Earle W. Evans, prominent attorney of Wichita, Kan., a member of the board of directors of the Atchison, Topeka & Santa Fe since October, 1933, and in 1933-34 president of the American Bar Association, died on July 30 of a heart attack while in New York to attend a meeting of the board of directors of the Santa Fe.

BATH & HAMMONDSPORT.—*Certificate of Unsound Financial Condition.*—This company has asked the Interstate Commerce Commission to issue a certificate that it is in an unsound financial condition. The authority is sought under section 22 (b) (9) of the Internal Revenue Code as amended by the Revenue Act of 1939. Under this provision a carrier, if it is declared by the commission to be in unsound financial condition, can purchase its outstanding bonds without including in its gross income the difference between the par value of the bonds and their purchase price.

BOSTON & MAINE.—*Plan of Exchange.*—This road's plan of funded debt readjustment, which was declared effective June 13, was consummated on July 25 when all necessary paper work and other details were completed, and it is expected that new securities in exchange and cash payments will soon be available.

According to a statement by President E. S. French analysis of the Boston & Maine's June financial statement shows that after meeting its new fixed charges and all contingent charges under the plan, the road had a surplus of about \$70,000 in that month. It was emphasized that this showing was made with the new fixed charges being operative during the last 18 days of June only.

Mr. French's statement read in part as follows: "The road earned from June 13 on all the fixed charges and contingent charges set up in the plan, and shows a surplus of about \$70,000 for the month of June after meeting all these charges. The detailed figures show that the Boston & Maine in June earned net income after fixed charges of \$28,057.79. Subtracting from this figure the proportional amount of contingent charges accruing during the 18 days from June 13, amounting to \$50,000 to the capital fund; the sinking fund on the new first mortgage bonds, amounting to \$33,955; interest on the new income mortgage bonds, amounting to \$108,646; and the sinking fund on the new income mortgage bonds, amounting to \$24,143—a total of \$216,745—it shows that the Boston & Maine had a surplus of \$69,312.

"The new issue of first mortgage 4 per cent, 20-year bonds amounts to \$67,910,200. The new issue of 4½ per cent, 30-year income bonds amounts to \$48,287,000, and the Plan of Exchange provides for a sinking fund of 1 per cent annually on each issue if earned."

CHICAGO & NORTH WESTERN.—*Abandonment.*—This company has asked the Interstate Commerce Commission for author-

ity to abandon a line extending from East End, Nebr., to West End, 2.9 miles.

CHICAGO & NORTH WESTERN.—*Reorganization.*—Evidence in support of the Chicago & North Western's contention that its outlook for improved earnings in the future warrants the inclusion of its stockholders in the reorganized property was submitted to the district court at Chicago this week. The railroad and its stockholders are opposing the Interstate Commerce Commission's plan for reorganization which eliminates present stock. Several witnesses, qualified as railroad traffic and agricultural experts, testified. Julius H. Parmelee, director of the Bureau of Economics of the Association of American Railroads, testified that while traffic and earnings of this railroad have fallen in recent years in common with those of other railroads as the result of economic depression, competition and other factors, the actual results of the last ten years could not possess as much significance as a forecast of future earnings based upon more nearly normal conditions. Railways of the country, especially the North Western, he said, are now enjoying an upward trend that started in November, 1938. All of the forecasts of the road's earnings in a prospective year by the I. C. C. were made before the upswing began. For a prospective year he estimated a net operating income for the North Western of \$21,107,000 compared with the I. C. C.'s estimate of \$9,609,000. The commission's figure of \$449,973,309 for total capitalization for the reorganized company, he said, was at least \$200,000,000 less than the valuation he offered.

The court set August 12 as the date for the filing of briefs and August 19 as the date for the filing of answers.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for \$943,000 and \$60,000 of equipment trust certificates, series M & N respectively, to effect a reduction in the interest rate on these certificates, which are now outstanding, from four per cent per year to 2½ per cent per year, resulting in total interest savings to maturity, if the change is made effective as of September 1, 1940, of \$49,440. The equipment trust certificates are now held by the Reconstruction Finance Corporation, which, according to the petition, has agreed to the change in interest rate.

DENVER & RIO GRANDE WESTERN.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$1,260,000 of two per cent equipment trust certificates, maturing in 10 equal annual installments of \$126,000 on September 1 in each of the years from 1941 to 1950, inclusive. The issue has been sold at 100.277 to Blyth & Co., Inc., of New York City, making the average annual cost to the company approximately 1.95 per cent.

DE QUEEN & EASTERN.—*Stock.*—This company has been granted authority by Division 4 of the Interstate Commerce

Commission to issue 60,000 shares of common capital stock of a par value of \$5 per share in exchange, on a share for share basis, for an equal number of shares issued without the authorization of the commission.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Ratification of Substitute Trustee.*—Division 4 of the Interstate Commerce Commission has ratified the appointment of Judson Zimmer as substitute trustee of this company's property in reorganization proceedings under section 77 of the Bankruptcy Act. At the same time Division 4 approved his compensation of \$7,500 a year.

MOBILE & OHIO.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for \$2,700,000 of 2½ per cent equipment trust certificates, maturing in 15 equal annual installments of \$180,000 on August 1 in each of the years from 1941 to 1955, inclusive. The proceeds will be used as part payment for equipment costing a total of \$3,399,000, and consisting of 1,000 40-ton, 40 ft. 6 in. box cars; 250 50-ton, 33 ft. one-fourth in. self-clearing hopper cars; and two 2,000 h. p. Diesel-electric locomotives.

The petition states that the company will sell to the car builders 2,000 reconditioned and rebuilt trucks and 1,000 rebuilt axles, costing \$472,500, which, together with \$226,500 in cash, will constitute the difference between the proceeds of the certificates and the total cost of the equipment. The issue has been sold at 100.099 to Salomon Brothers & Hutzler.

NEW YORK, CHICAGO & ST. LOUIS.—*Refunding of Notes.*—This road announced on July 29 that, in accordance with its plan of June 25 offering holders of its outstanding 6 per cent unsecured notes 20 per cent in cash and the balance in new 6 per cent debentures due 1950, such cash payment and new securities are now available. The announcement made in a letter to note holders signed by G. D. Brooke, president of the road, reads in part as follows: "The necessary authorizations have now been received from the Interstate Commerce Commission, and accordingly you may obtain the cash payment and debentures immediately upon forwarding your notes to Manufacturers Trust Company, 45 Beaver Street, New York. Proper adjustment of interest will be made at the time of exchange as outlined in the letter of transmittal."

Description of the refunding plan, which affects approximately \$12,678,750 of notes outstanding, appeared in the *Railway Age* of July 6, page 54. The Chesapeake & Ohio, which holds \$3,583,750 of the notes, has agreed that if other holders of not less than \$8,000,000 of the notes accept the road's offer by December 1, 1940, it will accept the new debentures for the full amount of its holdings, thereby foregoing its proportionate share of the 20 per cent cash payment amounting to \$716,750.

PITTSBURGH & WEST VIRGINIA.—*Notes and R. F. C. Loan.*—Division 4 of the Interstate Commerce Commission has approved a plan of funding this company's

Continued on next left-hand page

COORDINATE . . .

....with New Super Power

Every step of the defense program is based upon coordination. The railroads will once again be called upon to do their part by transporting heavier loads quickly. To meet these demands, Lima is prepared to supply the railroads with the latest super power available. Locomotives of the type that have earned for Lima its reputation of builders of Locomotives high in speed and hauling capacity and low in maintenance

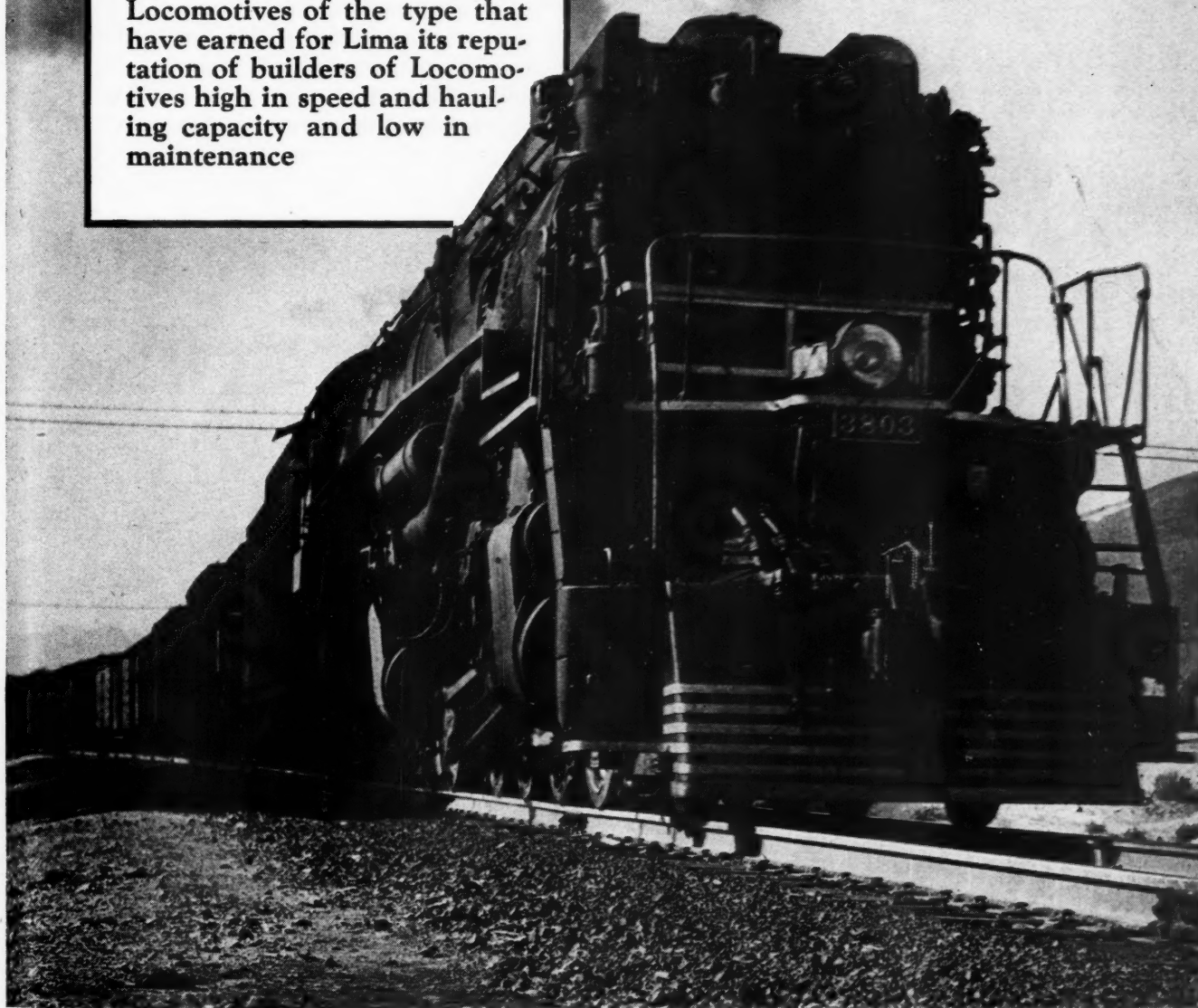


Photo courtesy Southern Pacific Company

LIMA LOCOMOTIVE WORKS,



INCORPORATED, LIMA, OHIO

entire floating debt under which it will issue \$7,400,000 of five-year four per cent secured notes, \$4,070,000 of which will be given to the Reconstruction Finance Corporation as security for a loan of that amount; \$3,000,000 to be sold to the Penn-road Corporation, and \$330,000 to the Chemical Bank & Trust Company of New York City. The proceeds of the notes, together with money from the company's treasury, will be used to pay off outstanding loans totaling \$7,454,961. The notes will be dated July 1, 1940, and will mature July 1, 1945. At the same time Division 4 approved a loan of \$4,070,000 to the road by the R. F. C.

ST. LOUIS MERCHANTS BRIDGE TERMINAL.—Acquisition.—This company has asked the Interstate Commerce Commission for authority to acquire control of the Madison, Illinois & St. Louis through the purchase of its capital stock.

SOUTHERN PACIFIC.—Operation.—This company has been authorized by Division 4 of the Interstate Commerce Commission to operate, under trackage rights, over a line of the United States Government extending from Yuma, Ariz., to Somerton, for a five-year period from August 1, 1940, to July 31, 1945.

SOUTHERN PACIFIC.—Stock and Operation.—The Klamath Northern, a new company, has asked the Interstate Commerce Commission for authority to operate a private railroad now owned by the Gilchrist Timber Company, extending from Gilchrist Junction, Oreg., to Crescent, 10.6 miles. At the same time authority is sought to issue 1,500 shares of capital stock to finance the purchase of the line.

UNION PACIFIC.—Operation.—This company has been authorized by Division 4 of the Interstate Commerce Commission to operate, under trackage rights, over a line of the Illinois Central extending from Omaha, Nebr., to Carter Lake, Iowa, 3,970 ft., together with a connecting track and two sidings, 124, 965, and 2,650 ft. long, respectively.

VIRGINIAN.—Operation.—This company has asked the Interstate Commerce Commission for authority to operate over lines of the Chesapeake & Ohio extending from Glen Jean, W. Va., to Tamroy, eight miles, and from Sugar Creek Junction, W. Va., to Pax, 6.2 miles, a total of 14.2 miles of main line and 12.3 miles of side tracks.

YOSEMITE VALLEY.—Reorganization Plan.—Examiner M. S. Jameson of the Interstate Commerce Commission has recommended that Division 4 approve a plan of reorganization for this company under section 77 of the Bankruptcy Act which would provide for a capital structure consisting of \$1,159,000 of four per cent income mortgage bonds and 23,180 shares of new common stock having a par value of \$50 a share. The equity of the present stock would be found to have no value if Examiner Jameson's report is adopted.

Average Prices of Stocks and Bonds

	July 30	Last week	Last year
Average price of 20 representative railway stocks..	28.57	27.91	30.03
Average price of 20 representative railway bonds..	57.93	57.69	60.27

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

C. F. Gilroy, chief clerk to the assistant general auditor of the Atchison, Topeka & Santa Fe at Topeka, Kan., has been promoted to auditor of freight accounts, succeeding **T. D. Alden**, who retired on July 31.

OPERATING

B. F. Fuller has been appointed manager, dining car service, of the Atlantic Coast Line, with headquarters at Wilmington, N. C.

A. S. Worthing has been appointed superintendent of the Copper Range, with headquarters at Houghton, Mich., succeeding **A. H. Ehlers**, who retired on July 8.

James R. Cary, Jr., trainmaster of the Chicago division of the Chesapeake & Ohio, with headquarters at Peru, Ind., has been promoted to assistant superintendent at Hinton, W. Va., succeeding **G. P. Gibbs**.

F. J. Liston, roadmaster on the Montreal Terminals division of the Canadian Pacific, with headquarters at Montreal, Que., whose appointment as acting assistant superintendent of the Montreal Terminals division, with the same headquarters, was announced in the *Railway Age* of January 20, has been promoted to assistant superintendent of the Montreal Terminals division.

L. B. Lutz, trainmaster on the New York Central system at Galion, Ohio, has been promoted to assistant to the assistant general manager, with headquarters at Indianapolis, Ind., succeeding **C. F. Wiegler**, whose appointment as assistant to the general manager of the Indiana Harbor Belt, the Chicago Junction and the Chicago River & Indiana, with headquarters at Union Stock Yards, Chicago, was announced in the *Railway Age* of June 29. **W. F. Voelker**, trainmaster at Columbus, Ohio, has been transferred to Galion, replacing Mr. Lutz, and **W. E. Kamm**, assistant trainmaster at Cincinnati, Ohio, has been promoted to trainmaster at Columbus, relieving Mr. Voelker.

L. P. Hopkins, assistant to the general manager of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to superintendent of the Salt Lake division, with headquarters at Ogden, Utah, succeeding **J. C. Goodfellow**, who has been transferred to the Western division, with headquarters at Oakland Pier, Cal., replacing **George E. Gaylord**, who retired on August 1.

Mr. Gaylord was born at Sunbury, Ohio, on June 27, 1872, and entered railway service in August, 1888, as a brakeman on the Western division of the Southern Pacific, later serving as a stationmaster, traveling conductor, terminal trainmaster and assistant superintendent. In September,

1918, he was promoted to superintendent of the Stockton division, with headquarters at Stockton, Cal., and in 1931 he was transferred to Oakland Pier.

R. J. Breton, trainmaster on the Valley division of the Atchison, Topeka & Santa Fe, at Fresno, Cal., has been promoted to general inspector of transportation, a newly created position, with headquarters at Los Angeles, Cal., and **W. L. More**, trainmaster at Winslow, Ariz., has been transferred to Fresno, relieving Mr. Breton. **P. T. Collins**, trainmaster on the territory East of Winslow, has been assigned the territory formerly under the jurisdiction of Mr. More, west of Winslow, with the same headquarters, and **H. G. Wood**, trainmaster at Chanute, Kan., has been transferred to Winslow, replacing Mr. Collins. **L. V. Lienhard**, trainmaster at La Junta, Colo., has been transferred to Chanute succeeding Mr. Wood.

Laurie Ells, superintendent of the Dominion Atlantic, with headquarters at Kentville, N. S., has been appointed general manager, with the same headquarters, having



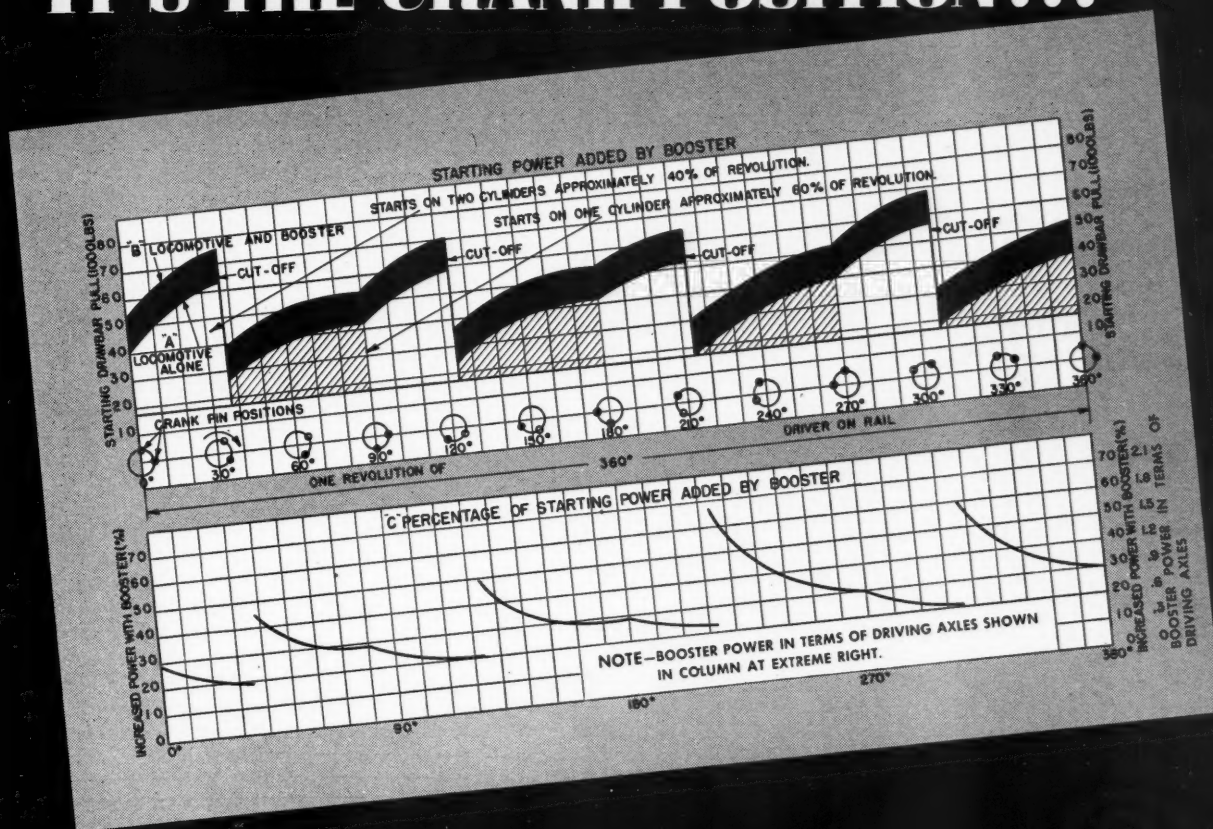
Laurie Ells

immediate jurisdiction over all matters pertaining to the operation of the railway. Mr. Ells was educated in Kings County Academy and entered the service of the Dominion Atlantic on December 19, 1910, as a clerk in the passenger department at Kentville. After serving in various capacities he became chief clerk in that department on December 1, 1915. Mr. Ells joined the operating department as trainmaster on January 15, 1919, and became superintendent at Kentville on May 1, 1924, the position he held until his recent appointment.

Albert W. Hayes, general manager of the Texas department of the Railway Express Agency, Inc., with headquarters at Houston, Tex., has been promoted to vice-president in charge of operations of the Western department, with headquarters at San Francisco, Cal., succeeding **A. L. Hammell**, who has been transferred to Chicago, in charge of operations of the Central department, relieving **E. M. Whittle**, who retired on August 1, after 53 years of continuous service. **W. M. Smith**, executive assistant, with headquarters at New York, has been appointed general manager of the Texas department at Houston, succeeding Mr. Hayes, and **S.**

Continued on next left-hand page

IT'S THE CRANK POSITION...



...that governs the starting power

THE above chart clearly shows that, for 60% of the crank positions, the average 4-6-4 type locomotive receives power from only one cylinder. If the locomotive comes to a stop with the cranks at any one of these positions there will be a deficiency in starting power that will necessitate the taking of slack...unless the locomotive is Booster equipped » » » The advantage of the added power of the Booster is best demonstrated when the locomotive crank angle is 214 degrees. In this position the locomotive alone develops a starting drawbar pull of only 18,000 lbs. When the Booster is added this is increased by 67% to 30,000 lbs. This increase in power equals two additional drivers and provides a smooth, quick start and rapid acceleration to road-speed.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO
MONTREAL

August 3, 1940

F. Pitcher, superintendent of organization at New York, has been advanced to executive assistant, with the same headquarters, replacing Mr. Smith.

Mr. Hayes has been in express service for more than 40 years. He was born in Hardensburg, Ky., and began his career



A. W. Hayes

as a driver at Monett, Mo., in 1900. The following year he became cashier at Memphis, Tenn., becoming chief clerk at St. Louis, Mo., two years later. From 1904 to 1908 Mr. Hayes served as agent at El Reno, Okla., and at Tulsa, Okla., from 1908 to 1911. He was chief clerk to the general superintendent from 1911 to 1913 and served for a year as assistant to general manager at Chicago. He served in various capacities at Chicago, including superintendent of vehicle service, until 1918, when he became superintendent of the Bureau of Organization, serving in this capacity until 1927, when he was transferred to Omaha as superintendent of the Nebraska-Wyoming and Iowa division. In 1935 he became assistant to vice-president in charge of traffic, at New York, and in 1937 became executive assistant to the president, serving in this capacity for one year. Mr. Hayes has been general man-



E. M. Whittle

ager of the Texas department at Houston, Tex., for the past two years.

Mr. Whittle was born on July 12, 1870, at Chicago, and entered the service of the American Express Company (now the

Railway Express Agency) in January, 1902, as chief clerk to the general agent at Chicago. He was appointed assistant general agent, with headquarters at St. Louis, Mo., in January, 1904, and in the following year was advanced to general agent at Pittsburgh, Pa., being transferred to Portland, Ore., five years later. In January, 1911, he was further promoted to superintendent at Portland, and in January, 1915, was appointed manager at Salt Lake City, Utah. Three years later he was advanced to general manager at Seattle, Wash., being transferred to Los Angeles, Cal., in April, 1934. Mr. Whittle was vice-president of the Western departments at San Francisco from July, 1935, to June, 1937, when he was transferred to the Central departments, with headquarters at Chicago, in which capacity he served until his retirement.

Mr. Smith began his career some 34 years ago as a clerk at Murfreesboro, Tenn., and later served as agent at Humboldt, Tenn. In 1913, he was advanced to the position of agent at Evansville, Ind., where he served for six years. He was transferred to Nashville, Tenn., in 1920 and was appointed general agent there in



W. M. Smith

1923. In 1925 he became traveling traffic agent, with headquarters at Atlanta, Ga., and from 1925 to 1927 he was general agent at Miami, Fla. Mr. Smith then served as superintendent at Jacksonville until September 1, 1931, when he became superintendent of the Georgia division, at Atlanta, Ga. He was superintendent of organization in the Southern departments at Atlanta from May, 1934, until his appointment to a similar position in the president's office in 1937, during which time he was chairman of the Standard Practices Committee. Mr. Smith has been executive assistant to the president, with headquarters at New York, for the past two years.

Mr. Pitcher has been in the express service for 27 years, starting as clerk at Chattanooga, Tenn. Between 1913 and 1918 he advanced to assistant cashier. After serving overseas with the American Expeditionary Forces from October, 1918, to July, 1919, Mr. Pitcher again reported for duty at Chattanooga, where he served in numerous positions until becoming chief clerk in 1921. He was transferred to Atlanta as assistant route agent in 1924, shortly thereafter becoming route agent

there. The following year he was appointed terminal agent and in 1931, general agent. Mr. Pitcher became superintendent of the Georgia division in 1936 and the following year was appointed superintendent of organization for the Southern de-



S. F. Pitcher

partments. For the past year Mr. Pitcher has served as chairman of the Standard Practices Committee.

A. A. Lowe, superintendent of the Tucson division of the Southern Pacific, with headquarters at Tucson, Ariz., has been promoted to the newly created position of superintendent of safety, with headquarters at San Francisco, Cal., and **H. R. Hughes**, assistant to the general manager at San Francisco, has been advanced to superintendent at Tucson, succeeding Mr. Lowe. **M. L. Jennings**, assistant division superintendent, with headquarters at Dunsmuir, Cal., has been appointed assistant to the general manager at San Francisco, replacing Mr. Hughes. **E. F. Nassoioy**, assistant superintendent, with headquarters at Sacramento, Cal., has been advanced to district superintendent, with headquarters at Dunsmuir. **R. E. Hallawell**, manager of the Interurban Elec-



A. A. Lowe

tric Railway Company, with headquarters at Bridge Yard, Cal., has been appointed assistant superintendent at Sacramento, relieving Mr. Nassoioy, and **S. L. Dolan**, superintendent of the Bridge Railway (San Francisco-Oakland Bay bridge), with head-



STONE BRIDGE SWITZERLAND

This natural stone bridge, which is situated on the Lausanne-Berne line of the Swiss Federal Railroads in Switzerland, was started in 1862. This sturdy structure, which took four years to complete at a cost of 800,000 Swiss Francs, consists of twelve spans, each of which is 72 ft. across. » » » 31 years ago the Security Sectional Arch was introduced to the railroads for the purpose of improving the combustion of the steam

locomotive. Since then locomotives have vastly improved, but American Arch Engineers have kept pace with these improvements and today the Security Sectional Arch is standard on American Railroads. Only with a complete arch can you realize the true economies of your Arch. Check every locomotive before it leaves your roundhouse.

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

60 EAST 42nd STREET, NEW YORK, N. Y.

***Locomotive Combustion
Specialists***

quarters at San Francisco, has been appointed manager of the Interurban Electric succeeding Mr. Hallawell.

Mr. Lowe entered railway service as a fireman on the Oregon-Washington Railroad & Navigation Company (now part of the Union Pacific system), later transferring to the accounting department. In 1912, he went with the Southern Pacific as chief clerk to the district engineer at Portland, Ore., and in 1922, he was made trainmaster of the Salt Lake division, later being transferred to the Western and Coast divisions. Mr. Lowe was appointed general transportation inspector in 1928, and in 1931, he was promoted to assistant superintendent of the Coast division. A year later he was appointed supervisor of transportation and in 1937 he was advanced to assistant to the general manager. On July 1, 1939, he was promoted to superintendent of the Tucson division, the position he held until his recent promotion which was effective August 1.

TRAFFIC

George W. Wood, general through freight agent of the Chesapeake & Ohio, with headquarters at Cincinnati, Ohio, has



George W. Wood

been promoted to freight traffic manager-solicitation, a newly created position, with the same headquarters. **A. M. Glassmeyer**, assistant general freight agent at Cincinnati, has been appointed assistant to the freight traffic manager-solicitation at that point, a change in title, and **E. F. Kessler**, assistant to the general through freight agent, has been appointed assistant to the freight traffic manager-solicitation, with headquarters as before at Cincinnati, also a change of title. The position of general through freight agent at Cincinnati has been abolished.

Mr. Wood was born at Cincinnati on April 4, 1888, and entered railway service at the age of 16 years as a clerk for the Kanawha Despatch Routes in that city. After occupying various clerical positions with the Kanawha Despatch he was advanced to soliciting agent in 1912 and to traveling freight agent in 1916. Mr. Wood entered the service of the Chesapeake & Ohio as soliciting agent at Cincinnati in 1920. Two years later he was advanced to general agent at the same point, where he remained until 1924, when he was pro-

moted to general traveling agent at Chicago. In 1927 he was promoted to general western freight agent at Chicago, then becoming assistant general freight agent at the same point in 1930. He was further advanced to general through freight agent at Cincinnati on January 1, 1931, the position he held until his recent promotion.

Eugene M. Cheney, commercial agent for the Waterloo, Cedar Falls & Northern at Chicago, has been appointed general agent at Waterloo, Iowa.

Charles Sorg, Jr., southwestern agent for the Northern Pacific at Dallas, Tex., has been appointed general agent at that point, a change of title.

C. A. Cromwell, traveling freight agent for the Chicago, Rock Island & Pacific at Philadelphia, Pa., has been promoted to general agent at Washington, D. C., a newly created position.

H. L. Traber, executive general agent for the Missouri Pacific at Kansas City, Mo., has been assigned also the duties of **P. E. Watson**, general freight and passenger agent, who has been granted a 90-day leave of absence because of illness.

MECHANICAL

Leonard R. Schuster, whose promotion to engineer of car construction of the Southern Pacific, with headquarters at San Francisco, Cal., was announced in the *Railway Age* of July 13, was born at Napa City, Cal., on March 12, 1883, and studied a correspondence school course in mechanical engineering. He entered railway service in December, 1901, in the passenger car department at Sacramento, Cal., and in January, 1907, was transferred to drafting work in the motive power department at San Francisco. In 1915, after advancing through several positions, he was promoted to assistant chief car draftsman and three years later he was advanced to chief freight car draftsman. Mr. Schuster was



Leonard R. Schuster

promoted to chief car draftsman in 1924, the position he held until his recent promotion.

John C. Fox, whose appointment as electrical engineer of the Virginian, with

headquarters at Princeton, W. Va., was announced in the *Railway Age* of July 20, was born in 1899, at Roanoke, Va., and



John C. Fox

was educated at the University of Virginia. He entered railroad work with Gibbs & Hill, Consulting Engineers, New York, on the electrification of the Virginian in 1924. In 1925 Mr. Fox went with the Virginian and has served as electrical foreman at the steam-generating station at Narrows, Va., and as general foreman of the electric locomotive shops at Mullens, W. Va.

ENGINEERING AND SIGNALING

F. R. Smith has been appointed engineer of bridges of the Union Railroad, with headquarters at East Pittsburgh, Pa.

J. L. Cox, assistant engineer on the New York Central, with headquarters at Chicago, has been appointed assistant engineer in charge of work equipment, with headquarters at Cleveland, Ohio, succeeding **F. W. Herbert**, who has retired.

I. A. Uhr, signal engineer of the St. Louis-San Francisco, with headquarters at Springfield, Mo., retired August 1 following an extended illness. **R. W. Troth**, acting signal engineer, has been promoted to signal engineer succeeding Mr. Uhr.

M. A. Baird, superintendent telegraph and signals of the Erie, with headquarters at Cleveland, Ohio, retired July 31 at his own request after fifty-three years of service with this railroad. **W. S. Storms**, assistant superintendent telegraph and signals, has been promoted to signal engineer with headquarters in Cleveland.

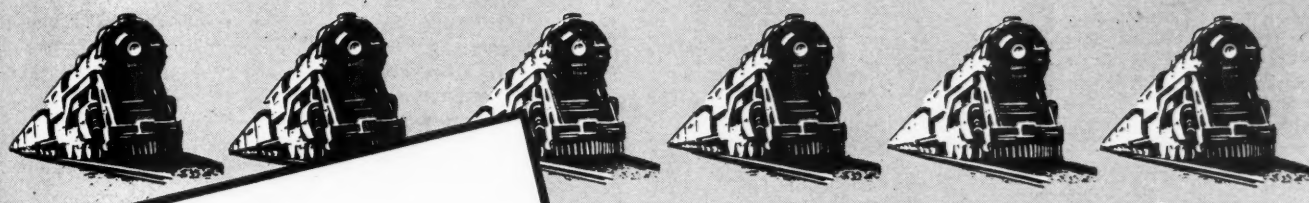
OBITUARY

M. M. Terrill, assistant general freight agent on the Green Bay & Western, with headquarters at Green Bay, Wis., died suddenly in Chicago on July 13.

Tracy Arnold Lynn, superintendent of transportation of the Illinois Terminal, with headquarters at St. Louis, Mo., died at the Veterans' hospital in that city on July 28 at the age of 53. Mr. Lynn had been in ill health for several years.

CONCENTRATED

BOILER CAPACITY



...WITH
TYPE "E"
SUPERHEATERS

The changed conditions of freight and passenger movements have necessitated many changes in the design and construction of the locomotive. Loads have been increased and running time reduced. The maximum amount of power must be crowded into a given size and weight of locomotive.

This has been accomplished with a boiler equipped with an Elesco Type "E" superheater. This type of boiler and superheater, without any increase in dimensions, has effected an increase of as much as 16% in boiler capacity and up to 80% in superheating surface . . . resulting in a decided increase in power over the Type "A" superheater-equipped boiler.

Don't skip the essential part of your locomotive when you modernize . . . begin at the boiler with Type "E" superheaters . . . your locomotives will then be able to meet the increased tempo of transportation.



SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
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THE SUPERHEATER COMPANY, LTD.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 Monthly Reports of Revenues and Expenses Representing 137 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF MAY, 1940 AND 1939

Item	United States		Eastern District		Southern District		Western District	
	1940	1939	1940	1939	1940	1939	1940	1939
Miles of road operated at close of month	232,819	233,530	57,374	57,576	44,350	44,472	131,095	131,482
Revenues:								
Freight	\$284,634,132	\$243,640,918	\$119,805,014	\$98,840,642	\$59,430,057	\$45,570,166	\$105,399,061	\$99,230,110
Passenger	29,741,537	31,758,396	16,601,382	18,136,475	3,809,790	3,612,258	9,330,365	10,009,663
Mail	8,356,449	8,227,797	3,193,057	3,183,776	1,422,133	1,394,796	3,741,259	3,649,225
Express	5,633,224	5,728,835	2,392,303	2,186,450	1,172,270	1,445,598	2,068,651	2,096,787
All other operating revenues	14,996,905	13,262,002	7,397,664	6,540,472	1,835,326	1,542,176	5,763,915	5,179,354
Railway operating revenues	343,362,247	302,617,948	149,389,420	128,887,815	67,669,576	53,564,994	126,303,251	120,165,139
Expenses:								
Maintenance of way and structures	44,175,476	41,826,338	16,321,521	14,895,697	7,897,541	6,826,265	19,956,414	20,104,376
Maintenance of equipment	65,419,963	59,220,509	28,025,594	24,431,661	13,644,988	11,177,752	23,749,381	23,611,096
Traffic	9,386,614	9,188,195	3,395,739	3,324,072	1,728,564	1,647,886	4,262,311	4,216,237
Transportation—Rail line	119,627,375	113,391,443	54,617,548	51,319,050	20,729,981	18,620,274	44,279,846	43,452,119
Transportation—Water line	605,471	438,515	.....	.....	.....	.....	605,471	438,515
Miscellaneous operations	2,968,998	2,928,245	1,349,984	1,284,488	368,921	325,657	1,250,093	1,318,100
General	11,009,183	10,789,877	4,425,746	4,202,299	2,089,490	2,041,679	4,493,947	4,545,899
Transportation for investment—Cr.	390,459	372,068	40,646	26,128	75,393	66,985	274,420	278,955
Railway operating expenses	252,802,621	237,411,054	108,095,486	99,431,139	46,384,092	40,572,528	98,323,043	97,407,387
Net revenue from railway operations	90,559,626	65,206,894	41,293,934	29,456,676	21,285,484	12,992,466	27,980,208	22,757,752
Railway tax accruals	32,798,148	28,759,371	14,134,297	12,754,773	7,392,414	5,344,269	11,271,437	10,660,329
Railway operating income	57,761,478	36,447,523	27,159,637	16,701,903	13,893,070	7,648,197	16,708,771	12,097,423
Equipment rents—Dr. balance	7,783,771	8,199,818	3,616,560	3,228,126	615,720	985,084	3,551,491	3,986,608
Joint facility rent—Dr. balance	2,900,880	3,074,964	1,613,151	1,693,549	301,723	328,366	986,006	1,053,049
Net railway operating income	47,076,827	25,172,741	21,929,926	11,780,228	12,975,627	6,334,747	12,171,274	7,057,766
Ratio of expenses to revenues (per cent)	73.6	78.5	72.4	77.1	68.5	75.7	77.8	81.1
Depreciation included in operating expenses	17,159,012	16,882,694	7,483,450	7,425,488	3,460,606	3,327,351	6,214,956	6,129,855
Pay roll taxes	9,552,538	8,544,778	4,105,316	3,592,492	1,723,955	1,484,298	3,723,267	3,467,988
All other taxes	23,245,610	20,214,593	10,028,981	9,162,281	5,668,459	3,859,971	7,548,170	7,192,341

FOR FIVE MONTHS ENDED WITH MAY, 1940 AND 1939

Miles of road operated at close of month*	232,959	233,650	57,392	57,616	44,360	44,492	131,207	131,542
Revenues:								
Freight	\$1,357,337,887	\$1,197,329,001	\$582,836,163	\$502,618,106	\$287,013,629	\$241,921,864	\$487,488,095	\$452,789,031
Passenger	160,983,186	159,772,375	87,189,154	88,607,673	27,338,749	24,534,171	46,455,283	46,630,531
Mail	40,801,669	40,022,707	15,599,627	15,377,600	7,089,144	6,990,983	18,112,898	17,654,124
Express	22,654,387	22,786,296	8,868,604	8,634,649	5,192,261	5,892,086	8,593,522	8,259,561
All other operating revenues	69,006,698	62,599,442	34,374,082	31,051,504	9,349,642	8,408,312	25,282,974	23,139,626
Railway operating revenues	1,650,783,827	1,482,509,821	728,867,630	646,289,532	335,983,425	287,747,416	585,932,772	548,472,873
Expenses:								
Maintenance of way and structures	187,338,159	174,933,807	72,247,419	66,856,324	37,065,561	33,079,161	78,025,179	74,998,322
Maintenance of equipment	331,283,556	304,373,956	147,331,282	130,757,646	66,577,315	58,379,440	117,374,959	115,236,870
Traffic	44,840,828	43,757,282	16,026,420	15,697,742	8,742,965	8,369,463	20,071,443	19,690,077
Transportation—Rail line	610,034,745	566,767,175	281,001,809	255,898,368	107,222,352	97,263,735	221,810,584	213,605,072
Transportation—Water line	2,686,366	1,997,530	.....	.....	.....	.....	2,686,366	1,997,530
Miscellaneous operations	15,756,404	14,800,003	6,933,325	6,412,567	2,645,869	2,248,611	6,177,210	6,138,825
General	54,552,662	53,579,158	21,688,633	21,366,713	10,508,082	10,125,675	22,355,947	22,086,770
Transportation for investment—Cr.	1,418,367	1,250,406	265,403	95,231	290,960	242,685	862,004	912,490
Railway operating expenses	1,245,074,353	1,158,958,505	544,963,485	496,894,129	232,471,184	209,223,400	467,639,684	452,840,976
Net revenue from railway operations	405,709,474	323,551,316	183,904,145	149,395,403	103,512,241	78,524,016	118,293,088	95,631,897
Railway tax accruals	155,647,386	142,611,136	66,115,160	61,014,309	34,960,784	28,738,885	54,571,442	52,857,942
Railway operating income	250,062,088	180,940,180	117,788,985	88,381,094	68,551,457	49,785,131	63,721,646	42,773,955
Equipment rents—Dr. balance	40,428,824	39,799,123	19,114,066	17,138,047	2,686,365	3,826,493	18,628,393	18,834,583
Joint facility rent—Dr. balance	13,626,462	14,684,623	7,665,853	8,032,758	1,230,823	1,627,393	4,729,786	5,024,472
Net railway operating income	196,006,802	126,456,434	91,009,066	63,210,289	64,634,269	44,331,245	40,363,467	18,914,900
Ratio of expenses to revenues (per cent)	75.4	78.2	74.8	76.9	69.2	72.7	79.8	82.6
Depreciation included in operating expenses	84,911,946	84,145,194	36,843,912	36,752,402	17,188,128	16,632,114	30,879,900	30,760,678
Pay roll taxes	46,878,280	41,988,941	20,632,036	17,986,117	8,612,511	7,522,743	17,633,733	16,480,081
All other taxes	108,769,106	100,622,195	45,483,124	43,028,192	26,348,273	21,216,142	36,937,709	36,377,861

* Represents an average of the mileage reported at the close of each month within the period.

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.